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# THE PRINCIPLES OF UNDERSTANDING

AN INTRODUCTION TO LOGIC FROM THE  
STANDPOINT OF PERSONAL IDEALISM

BY

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## PREFACE

I HOPE it is not presumptuous to anticipate that philosophy in the present century will enter upon a new career of usefulness. I do not mean that in taking up new tasks it will quit the old. There are certain reasons why philosophy has been valuable to men since the epoch when it first arose in ancient Greece; these same reasons will make it valuable as long as human culture endures. But may we cherish the hope that a time is at hand when it will appeal to us with a new claim?

If any one were to ask, Has philosophy ever been of any practical use? the friend of philosophy could not meet the question without a certain hesitancy and a qualification; so much depends on what is meant by 'use.' Philosophy has been useful as poetry has been useful: it has brought home to man the mystery and romance of his existence; it has led his mind up from low thoughts and cares into a higher and purer atmosphere. Its greatest importance has been with religion; if religion is useful, then philosophy has been useful. Popular religion is very largely a substitute for philosophy; and even in minds where the two

things are kept most distinct, they must interact in no small measure. They have interacted most where they have been pursued most keenly. What would medieval theology have been without Aristotle? And what would medieval philosophy have been without the medieval Church?

But the most convinced enthusiast could not claim that philosophy has given guidance to men engaged in the sort of business which is commonly called useful. I leave aside the general effect of training. It is plain enough that men who have traversed a philosophic curriculum gain advantage thereby for an ordinary professional career; but this is due more to the mental gymnastic than to any specific instruction which their teachers have imparted. What statesman makes any appeal to political philosophy; what moral reformer makes appeal to ethics; what educator who professes to train the understanding makes appeal to logic? So patent has it been that philosophy can give no practical advice that its incapacity has been put forward almost as an axiom. Minerva's owl, said Hegel, cannot begin its flight till the shades of evening have begun to fall. But, I think, that owl has hooted long enough. Hegel's alleged necessity of thought is nonsense. It is the duty of philosophy, I maintain, to establish theoretical principles on such matters as politics, moral conduct and education; and these principles should be valuable for the guidance of practical men.

A philosophic synthesis to be really useful must be founded on principles which correspond with the true nature of reality. Of all speculative principles the two most important, I hold, are these—that personal experience should be the basis of our synthesis, and that personal experience is spiritual. These are the principles of Personal Idealism. There are sufficient reasons why they have never been adequately recognized hitherto. Full recognition of the principle of personality was impossible before the rise of modern psychology. Psychology consists in exploration of the psyche: and this, though it may seem simple (a man has only got to look within his own breast), is really a most difficult business; it requires a long succession of careful observers and a great accumulation of results. Only in recent years has psychological theory been in any way adequate to psychological facts. And so many of those who have striven hardest to explore the psyche have neglected the cardinal condition of success, the recognition of the spirituality of personal experience.

It will be argued in the following pages that logic should be the theoretical account of the actual processes of human understanding. If logic could fulfil this programme it would serve as the basis of education. The business of the educator is to train the understanding, and therefore a true theory of understanding should be as helpful to him as a true physiology is to one who professes to train the body.

The time seems scarcely to have come for attempting a complete theory of understanding; so many preliminary questions call for discussion. These cannot be put aside or taken for granted; and yet to include them in a 'System of Logic' would swell the work beyond reasonable length. But even these preliminaries have a direct bearing upon utility. This, at any rate, is how I should like my work to be judged: Does it throw any light upon the way in which our minds actually work? Does it contain suggestions useful for those who think much and are training others to think? If not, I am prepared to admit that it is a failure.

There are various kinds of human utility; good systems of ideas in religion, education, morals, law and politics are not less truly useful than food, houses and clothing. As many men have lived and died for the higher utilities as for the lower. I think that in the future every philosophical work, which is not manifestly a poem, will have to justify itself on the ground of utility; and that every thinker will have to write in the spirit of those who desire, in Bacon's phrase, "to contribute to the relief of man's estate."

H. S.

*December, 1914.*

## CONTENTS

CHAP.		PAGE
I.	THE SCOPE OF LOGIC . . . . .	1
	§ 1. Logic is the theory of understanding. . . . .	1
	§ 2. It is not concerned with <i>a priori</i> laws of thought; . . . . .	2
	§ 3. and includes much more than the search after truth. . . . .	4
	§ 4. This introduction to logic aims at stating the nature of understanding and its relation to passion. . . . .	8
II.	LOGIC AND ANIMISM . . . . .	12
	§ 1. Logic should be treated dynamically. . . . .	12
	§ 2. This necessitates the rejection of epiphenomenalism . . . . .	13
	§ 3. and of psycho-physical parallelism, . . . . .	16
	§ 4. and acceptance of interactionism. . . . .	26
	§ 5. As dynamic, logic should recognize the soul, which is of wide extent; logic therefore is an extensive study. . . . .	28
III.	NOESIS . . . . .	32
	§ 1. There is a non-sensuous element in understanding, the cognition of form, or noesis; . . . . .	32
	§ 2. which is all-pervasive. . . . .	36
	§ 3. Noesis is proved to be the essential element of understanding, because it is the principle of mental association. . . . .	38
	§ 4. Noesis is total-working. . . . .	40
	§ 5. Associationism, which assumes the action of understanding to be part-working, cannot explain cognition of form. . . . .	3
	§ 6. The total-workingness of noesis is exemplified in invention. . . . .	51

CHAP.		PAGE
	§ 7. As total-working noesis is synoptic, schematic and coactive. . . . .	57
	§ 8. The working of noesis may be illustrated further from receptive apprehension, . . . .	59
	§ 9. from retention, . . . . .	62
	§ 10. and from recalling and forgetting. . . . .	70
	§ 11. The noetic theory explains all actual forms of association. . . . .	75
	§ 12. The working of noesis is apparent in thought, synthetic and analytic, . . . . .	77
	§ 13. in knowledge, . . . . .	80
	§ 14. in perception, . . . . .	82
	§ 15. and in motor co-ordination and habit. . . . .	84
	§ 16. The development of understanding is continuous. . . . .	87
	§ 17. The exercise of understanding modifies the soul. . . . .	88
	§ 18. Noesis has been imperfectly recognized because it is inarticulate, . . . . .	90
	§ 19. and because understanding has not been viewed in relation to passion. . . . .	91
IV.	SENSUOUS EXPERIENCE . . . . .	93
	§ 1. Sensuous experience is related to noesis as content to form. It has two kinds, sensation which is primary, . . . . .	93
	§ 2. and imagery which is derivative. . . . .	95
	§ 3. As being susceptible of formal arrangement sensation has various intrinsic qualities; though we know its existence and qualities only as formally arranged. . . . .	97
	§ 4. Sensationalists put forward claims for sensation which cannot be justified: that sensations are the first things in consciousness; . . . .	101
	§ 5. that perception is nothing but sensation; . . . .	103
	§ 6. and that thought is nothing but imagery. . . . .	106
	§ 7. Where images do occur in thinking they bear no fixed relation to the thought. . . . .	108
	§ 8. The real use of imagery is to make thought more vivid, accurate and controllable. . . . .	111
	§ 9. Visual imagery especially is helpful in science. . . . .	114



# CONTENTS

xi

CHAP.		PAGE
V.	SUBCONSCIOUSNESS . . . . .	117
	§ 1. The theory of noesis requires the recognition of subconsciousness. . . . .	117
	§ 2. Subconsciousness is proved by hypnotic experi- ment, . . . . .	120
	§ 3. and is required by the doctrine of interaction between soul and body. . . . .	124
	§ 4. The practical difference between focal conscious- ness and subconsciousness consists in the distribution of attention. . . . .	127
	§ 5. The subconscious is the larger part of the soul; it is the source of passion, . . . . .	129
	§ 6. of noetic invention, and of retention. . . . .	133
	§ 7. We can have subconsciously sensuous experience, and feeling-tone. . . . .	135
	§ 8. Invention is largely subconscious; . . . . .	138
	§ 9. in its initial desire, . . . . .	142
	§ 10. in brooding, . . . . .	143
	§ 11. in counselling, . . . . .	146
	§ 12. and in the feeling-tone produced by the result of the invention. . . . .	151
	§ 13. The foregoing principles may be illustrated from literary composition. . . . .	152
	§ 14. Receptive apprehension also is largely sub- conscious. . . . .	156
	§ 15. Recognition of subconsciousness is essential to logic. . . . .	157
VI.	THE SOCIAL MIND . . . . .	161
	§ 1. In addition to individual minds there exists a social mind. . . . .	161
	§ 2. The theory of a social mind is helpful to logic. . . . .	162
	§ 3. Facts supporting the theory are ( <i>a</i> ) the influence of societies upon their members, . . . . .	164
	§ 4. which is due to social will, and has deep in- fluence on literature; . . . . .	167
	§ 5. ( <i>b</i> ) social products such as language; . . . . .	169
	§ 6. ( <i>c</i> ) animal societies; . . . . .	171
	§ 7. ( <i>d</i> ) the timely appearance of eminent men. . . . .	172

CHAP.		PAGE
	§ 8. The difficulties against the theory of the social mind are no greater than those against the theory of the individual soul. . . .	174
	§ 9. The social mind does not extinguish, but enhances, the individual. . . .	177
VII. PASSION	. . . . .	180
	§ 1. Passion is the dynamic element of the soul; the lowest kind is appetite, . . . .	180
	§ 2. the next higher is affection, . . . .	183
	§ 3. and the highest valuation. . . .	185
	§ 4. Utility belongs to objects which are desired but have no intrinsic value. . . .	189
	§ 5. Sentiments are organized valuations. . . .	190
	§ 6. Volition is the energy with which the agent pursues his scheme of life, . . . .	193
	§ 7. and principles are the elements of the scheme. Enthusiasm is the warmth of valuation with which a purpose is pursued. . . .	195
VIII. COSMOTHESES AND PASSION	. . . . .	197
	§ 1. Passion has a share in cosmothesis. . . .	197
	§ 2. The primitive general desire of life cooperates in the primitive stage of cosmothesis. . . .	199
	§ 3. Particular desires prompt, subjectively the formation of purposes, objectively the perception of situations. . . .	201
	§ 4. Utility prompts the recognition of distinct objects, . . . .	206
	§ 5. a faculty which is greatly strengthened by affection. . . .	207
	§ 6. Recognition is especially the stage of instinct. . . .	209
	§ 7. Self and objective world are correlative organizations, having both a passional and a noetic aspect. . . .	211
	§ 8. Personal affection prompts the cognition of individuals. . . .	215
	§ 9. Corporate affection prompts cognition of corporate bodies; and so enables us to cognize classes. . . .	219

# CONTENTS

xiii

CHAP.		PAGE
	§ 10. Valuation, which has a corporate origin, leads to the fullest knowledge of the individual and to self-consciousness. . . . .	222
IX.	THE GENERAL RELATION OF PASSION TO UNDERSTANDING	227
	§ 1. Passion from the first contains understanding implicitly. . . . .	227
	§ 2. Understanding disengages itself as men rise in the scale of passion. . . . .	232
	§ 3. The implication of understanding with passion explains the total-workingness of understanding. . . . .	235
X.	THE FUNCTIONS OF UNDERSTANDING . . . . .	237
	§ 1. Our chief noetic functions have a passionate character. . . . .	237
	§ 2. This character is exemplified in purpose, . . . . .	238
	§ 3. in schematism, . . . . .	239
	§ 4. in individual conception, . . . . .	242
	§ 5. in abstraction, . . . . .	244
	§ 6. in class-conception, . . . . .	245
	§ 7. in generalization . . . . .	248
	§ 8. and in analysis. . . . .	249
	§ 9. Universal concepts have passion in their origin, but less in their maturer developments. Such concepts are Space, . . . . .	250
	§ 10. Time, . . . . .	252
	§ 11. and the various kinds of Relation. . . . .	254
XI.	REASONING . . . . .	257
	§ 1. Reasoning includes judgment and inference. Any particular judgment depends upon a supporting noetic-passional system. . . . .	257
	§ 2. Inference is an extension of judgment. . . . .	261
	§ 3. The characteristics of good practical reasoning are explained by recognizing the supporting system. . . . .	264
	§ 4. Synthetic and analytic reasoning in theoretic matters have a similar explanation. . . . .	269

CHAP.		PAGE
	§ 5. Reasoning power is impaired by any cause which impairs the general dynamic development of character. . . . .	272
XII.	SCIENCE . . . . .	279
	§ 1. Science begins with the formation of a cosmic synthesis, . . . . .	279
	§ 2. combined with a cosmic interest; which presupposes a conception of total human good. . . . .	283
	§ 3. Hence philosophy is the parent of the sciences. . . . .	285
	§ 4. All this has bearing upon pragmatism and pluralism. . . . .	287
XIII.	THE ADVANCE OF UNDERSTANDING . . . . .	290
	§ 1. Intellectual advance requires advance of passion. . . . .	290
	§ 2. New intellectual styles are established <i>per saltum</i> , and therefore cannot be predicted. . . . .	294
	INDEX . . . . .	301

## CHAPTER I

### THE SCOPE OF LOGIC

§ 1. Logic should be defined as the theory of understanding; such is the liberal and dignified tradition of Oxford philosophy which is embodied in the actual teaching of the University. Logic in a narrower sense, as the theory of the forms of argument, is a very good study in its way; but it is a matter of subordinate interest and should take some different name.

The understanding which the logician studies, in the main, is ordinary understanding, the intellectual process which we exhibit in our conduct from hour to hour; though any treatise which professes to be comprehensive should also give a theory of that most advanced and systematic form of understanding which we call Science. The term 'understanding,' as currently used, is very wide, including every sort of intellectual process from the lowest to the highest. Consider some everyday examples: a weasel understands how to hunt a rabbit; Messrs Braid and Vardon understand golf; a chauffeur understands the engine

of his car; the Registrar of this University understands his duties; the Professor of Anthropology understands the subject of his chair. Evidently the term is applicable not only to the most abstract thinking of science, and to those functions of business management which demand both cultured and practical abilities in equal measure; but also to technical knowledge, to the bodily skill of motor coordination, and even to animal intelligence. And the scope of the logician should be no less comprehensive; the 'principles of understanding' should be principles exemplified at every level of intellectual activity.

§ 2. Logic then is pre-eminently a study of the actual; its purpose is to explain the processes of our own minds and the minds of persons whom we know. This needs to be said in view of the frequent assertion that the business of logic is with *a priori* laws of thought which exist, as the laws of mathematics are supposed to exist, quite independent of anything which exemplifies them. My argument against the *a priori* logician is perplexed by the fact that he seldom makes it plain whether the *a priori* laws are embodied in actual thinking or not. If not, then my line of answer to him would be that there must be two sorts of logic, one the *a priori* logic, which the apriorist may keep to himself; and the other the study of actual thinking, which is the subject of the present volume.

But if the apriorist asserts that his laws are embodied in actual thinking and constitute its governing principles, then we must ask him to tell us what they are. The question will reduce him to confess that he can produce no laws such as could be put beside those of mathematics. The only *a priori* laws of thought which have ever been propounded, are either futile, attenuated generalizations such as the Law of Identity; or else the rules of the Syllogism, for which nobody now has a good word to say.

A little reflection will show why there can be no such laws of thought as the *a priori* logician desiderates; the facts of understanding are very different from those of matter and motion, which are the province of the mathematician. Matter and motion present definite measurable uniformities capable of being formulated into exact laws on which mathematical calculations can be based. Not so the facts of understanding: a certain regularity and systematic arrangement is discernible in them; but nothing to which measurement can be applied.

The whole notion of *a priori* laws of thought is an anachronism, the ghost of the old formal logic haunting our schools long after its real life is ended. The logic of the Middle Ages, indeed all their science, was carried on by disputation; and thus the medieval logicians came to believe that their

rules of disputation, that is, the syllogistic rules, were of infinite importance and unshakable validity, no less certain than the first principles of mathematics, no less independent of personal experience than the first principles of morals and revealed religion. The conservative logician of the present day still holds to it that there must be *a priori* laws of thought; though, having lost faith in the syllogism, he cannot tell us what they are.

§ 3. Granted however that logic should explain the actual, may not my definition be too wide? Does the whole of understanding come within the purview of the logician? I hold that it does, in spite of the weight of authority against me. One of the leading authorities, Professor Boyce Gibson, has laid it down in his *Problem of Logic* that "logic is the mind's systematic attempt to understand the nature and conditions of the search after truth." However this dictum be interpreted, it seems to me to make an unjustifiable limitation of the field of inquiry. I admit, of course, that the search after truth is very important; and logic is certainly bound to give an account of it. But we use our understanding for very much more than for searching after truth. The main use of understanding is to get what we want in order to live; and we cannot live on truth. Truth-seeking and truth-finding are subordinate to the formation of purposes and the satisfaction of desires.



Consider the difficulties which arise from Professor Gibson's limitation. If logic deals with nothing but the search after truth, what account can we give of a work of fiction? Take for example such a work as *Waverley*. It is composed of assertions indistinguishable outwardly from a history of real events. Now would Professor Gibson argue that the historical assertions have logical quality; but that the assertions in *Waverley* have no logical quality? Or, if the latter possess logical quality, do they possess it in virtue of searching after truth? Again, consider the work as a whole. Taking *Waverley* as typical of the good novel, surely we can say that it has more logicity than a bad shilling-shocker. To the plain man it would seem that the story of a good novel is just as logical as a history of real life; and this because the good novel represents its characters as forming rational purposes and as working rationally to achieve them: while in the bad novel there is very little meaning or consistency. I do not see how this argument can be parried, except by the weak reply that the work of fiction is logical in so far as it "holds the mirror up to nature." A fiction may not intend to hold up a mirror at all; it may be trying to make a change in nature, like Dickens' account of Dotheboys Hall, or to laugh at nature, like Samuel Butler's *Erewhon*. In a fictitious writing fulness of meaning

and consistency, not fidelity to nature, are what makes it logical. Which of the comedies of Aristophanes have the most logic, the fantastic ones or the more common-place? And which of them professes to devote itself to the search after truth? If fiction is excluded from logic, *a fortiori* all lies must be. 'No great loss,' the reader may say. Well, perhaps not; but surely some lies are more logical than others.

But in his actual treatment, Professor Gibson narrows the field of inquiry even more than his definition requires. "The nature and conditions of the search after truth" ought certainly to include such acts of thought as questions, and probably even optatives and imperatives; for we cannot search after truth without asking questions, and in most kinds of search we have to express wishes and issue commands. But *The Problem of Logic* in its actual treatment nowhere recognizes these kinds of logical expression. Here Prof. Gibson is in agreement with the majority of his colleagues; conservative logicians definitely exclude such things from the purview of their science.

But can any expressions of understanding be rightfully excluded? Surely they all have something logical about them. The question, 'What is the difference between a postage-stamp and a naughty boy?' has evidently less meaning and therefore less logicality than the question, 'What

happened at the last General Election?' If wishes, commands and questions have meaning, what is the science which treats of them as having meaning? Is it psychology? If so, the boundary between psychology and logic becomes difficult to draw. It would seem that, when we say, 'The Liberals won the last election,' our utterance as having meaning is studied by logic; but that, when we say 'Did the Liberals win the last election?' it is studied by psychology. This hardly seems satisfactory, and it is certainly not a division which is admitted by psychologists. Those writers ought to have their chapters on optatives, commands and questions as intelligible utterances; but no such chapters exist.

But this limitation of the field of logic is trifling compared with that which results from the exclusion of prospective judgments. Take a simple example, 'The Liberals will win the next election'—here is a judgment no less categorical in form than the time-honoured, 'All men are mortal,' and no less entitled to claim its due place in logical theory. As a matter of fact such judgments are invariably omitted by the current text-books. My own opinion is that the prospective faculty of understanding is by far the most important of all, and that the due recognition of it will involve a thorough reconstruction of logic.

The upshot of my argument then is that you  
OF LOGIC

cannot take one part of human understanding and put a ring-fence round it and say, 'This is the province of logic; the rest may be dealt with by some other science, but certainly not by logic.' My scheme of logic includes much more than the acts of understanding which are capable of verbal expression, such as wishes, commands, questions and fictions; but it at least includes them. I do not think that any unprejudiced student will maintain that such utterances as, 'May the Liberals win the next election,' 'Liberals, win the next election,' 'Did the Liberals win the last election?' 'The Liberals will win the next election,' 'The Tories won the last election' (false), differ generically from 'The Liberals won the last election.' They all represent acts of understanding and, as such, come under one science. The statements which we exclude from logic (except so far as they come under 'Fallacies') are nonsensical statements—statements with no purpose, or none that a healthy mind can understand; or statements that might show purpose in certain contexts, but show none in the context in which they actually occur.

§ 4. The present work is an introduction to logic, not in the sense that it works quickly over the main field of study, but in the sense that it considers with fulness some preliminary matters which seem to need special consideration at the present juncture of philosophy. Its first business

is the fundamental question, What is understanding? This, the layman might suppose, is a question which has been settled long ago. The expert, however, knows otherwise; it is a question which logical treatises usually avoid. Mr Joseph's *Introduction to Logic*, for example, begins by defining logic as "the science of thought"; but he does not tell us what thought is. Several years ago the late Dr Hutchison Stirling published a book with the title, *What is Thought?* I have always held it creditable to him that he put the question so squarely; though the purport of his answer was far from plain.

It is no blame to any logician that he cannot define understanding; understanding is too ultimate for definition: but it can be analyzed to some extent, and the essential part of it described. My argument will be that understanding is spiritual; it is not sensational, still less mechanical or material. Against these false theories idealist logicians have always protested; but the grounds of their protest seem to me inadequate. I think that the true line of argument against the sensationalist and materialist is to show both that understanding is an active experience, and that the mind in doing acts of understanding has powers which do not belong to any material object or to sensation. In following up the argument it will be necessary to survey some other functions and qualities of

soul-life. Altogether the full answer to the question 'What is understanding?' will be a somewhat extensive affair.

This is the first part of my task; the other part is to show the relation of understanding to that element of the soul which I call passion. The second part indeed is necessary to complete the first; it is impossible fully to explain what understanding is without showing how it is related to passion.

In recent years, writings of a pragmatist tendency have made the world familiar with what is termed 'Intellectualism.' It is intellectualism to treat the intellectual element of soul-life too much in separation from the passionate or dynamic. This is a kind of mistake which is more often found in the early stages of science. The first business of the scientist is to analyze and make distinctions; his fault at that stage is to regard the distinctions as absolute. Nothing can exceed the separateness of human faculties in the psychology of Plato. The maturer work of science is to see the deeper connections; established distinctions are not given up, but the things distinguished are recognized to be elements in a wider scheme. In all the sciences which deal with living things, the tendency to see things together has been vastly strengthened by the progress of biological science. It is generally agreed now that the soul

is subject to the common laws of organic evolution, and that it has reached its present state by a process of growth in which every function has interacted with all the rest. If that is so, intellectualism has become impossible; it belongs to a stage before Darwin. I think the general statement, that there must be a close connection between the intellectual and the dynamic elements of the soul, will not be seriously disputed. But previous writers, so far as I am aware, have not explained what kind of connection it is, and how the dynamic element permeates the understanding. To do this will be the aim of the present book in its later chapters. It is work which seems to me necessary for a good foundation to logic.

## CHAPTER II

### LOGIC AND ANIMISM

§ 1. Logic, we have agreed, is the study of intellectual processes which actually occur. And now the question arises, Which sort of intellectual processes are we to consider first as being the most typical and important? For reasons which will appear more plainly in the sequel I think that creative processes should be put first; I hold that the mind shows its nature most fully when it initiates and invents, rather than when it is passive and receives. Of the various kinds of intellectual creation the most interesting are certainly the exalted kinds, such as art and scientific discovery. But we must recognize that these are not the foremost either in order of origin or of practical importance. The main business of understanding is to foresee; it is foresight which distinguishes the animal from the inorganic and men from brutes. Now foresight can be made effective only by purpose and plan. Our main business as intelligent beings is to form plans and purposes for



satisfying our daily needs. This active character of understanding alone would justify a dynamic treatment of logic. The invention of plans is a kind of doing, indeed two kinds of doing. The vast majority of our purposes and plans are material-practical, formed in order to move our bodies, and through our bodies to move material things. Thus, indirectly, the understanding has a place among the forces of the material world. Moreover, invention, in itself, is doing; it brings something into being which did not exist before, and that the most effective part of man's experience: for without plans we can accomplish nothing.

If all this be true, anti-dynamic theories of consciousness block the path of logic at the outset. The theories which I am thinking of are epiphenomenalism and psycho-physical parallelism. Both deny in different ways that consciousness can do anything in the world of ordinary experience. I propose to refute them in order to prepare the way for the chapters which follow.

§ 2. The most copious and systematic exponent of epiphenomenalism in recent years was the late Dr Shadworth Hodgson. "The addition of consciousness to living bodies," he said, "affords no ground for supposing that consciousness has a causality of its own; or reacts upon the organism in which it appears" (*Theory of Practice* 1, 425). Consciousness, he said elsewhere, is like "the foam

thrown up by or floating on a wave," or like "an aura or melody arising from the brain but without reaction upon it"; or, as Professor Stout somewhere expressed it for him, like a tune which molecules grind out to amuse themselves. The motive which impelled him to hold this theory was his faith in the sufficiency of materialism. Materialism has no fixed and final formula; it means no more than a conviction that the conceptions used by scientific men for their researches in the material world suffice to explain everything. At the dawn of science the material world was conceived as 'atoms and the void,' at the Renaissance as 'extension,' in the last generation as 'matter and motion,' in the present generation as 'physico-chemical energies.' Epiphenomenalism as it was held by Shadworth Hodgson meant that all the facts of consciousness are negligible by-products of physico-chemical energies in the nervous system.

Many of the objections to epiphenomenalism have been ably stated by Mr MacDougall in his *Body and Mind*; such as, that it contradicts the Law of Conservation of Energy and the Law of Evolution: and it would be easy to add to their number. But I wish to rely entirely upon the one objection which is specially suitable to my line of argument. The psychic quality which I am keeping in view all through these pages is the creativeness of understanding. Now creation implies foresight,

the anticipation of some contingency for which the creative act is done. It is the fact of foresight which kills the epiphenomenalist theory.

The prospectiveness of understanding is recognized even by some of the philosophers who are inclined to materialism; Herbert Spencer, for example, in his *Data of Ethics* regards it as a mark of advanced evolution to prefer a future enjoyment which is greater to a present enjoyment which is less. Now, according to the epiphenomenalist, consciousness is entirely negligible—a futile foam, a meaningless melody; what really counts is the material process going on in the brain: speaking conventionally, men say that the conscious agent is looking ahead and planning; in reality, the brain is looking ahead and preparing for what is going to happen. All this is quite incredible: prospectiveness is a function which we have no warrant whatever for ascribing to any material substance; the plainest characteristic of matter is its absolute blindness and want of prevision. It makes no difference whether we adopt the earliest and crudest conception of matter or the latest and most refined; whether we speak of atoms or of energies. No physico-chemical energy ever fore-saw anything. It is consciousness, then, that foresees and plans; and foresight and planning are most vitally important kinds of doing. This cardinal fact alone forbids us to assume that con-

consciousness is merely an idle by-product of material processes.

This may seem a brief refutation of epiphenomenalism; but the theory has really no claim to a larger consideration, because it is not supported by any eminent logical authority. Herbert Spencer, although his *Principles of Psychology* contains something which might be taken to stand for a theory of understanding, seems not to have reckoned logic as a legitimate science at all. Dr Charles Mercier, the well-known exponent of what may be called medical materialism, has written a *New Logic* which differs widely from accepted views, but certainly cannot be regarded as a comprehensive theory of understanding. Neither he nor Spencer can be allowed to have standing-ground in the present controversy, for neither takes any account of the cardinal fact of foresight in logical matters; which is the more remarkable in Spencer, since he recognizes foresight so definitely in his ethical doctrine.

§ 3. But psycho-physical parallelism has a higher claim; its adoption by Professor Stout alone would require that it should be fully discussed. The theory, as put forward by him, is to the following effect (*Manual*, First edition, pp. 50 *sq.*)<sup>1</sup>.

<sup>1</sup> Professor Stout has somewhat modified his views in the recent edition of the *Manual*. But, as he still adheres to the theory, I have used his earlier and sharper presentation of it.

Nervous process and psychical process form two parallel series which march exactly side by side, but have no influence upon each other. Within each series there is causal connection: that is to say, any nervous event is caused by the preceding nervous event; and any psychical event is caused by the preceding psychical. But no nervous event has any influence upon any psychical event, or *vice versa*. This theory, so Professor Stout claims, "forms the most convenient working hypothesis for explaining the facts of mind." I do not think that he can justify the claim. Psycho-physical parallelism seems to me a most inconvenient hypothesis; to use a common and even hackneyed phrase, if it is true, knowledge becomes impossible.

The form of parallelism which Professor Stout advocates, and I am about to criticize, is individual parallelism, existing between conscious processes and nervous processes in each individual person. This of course is widely different from universal parallelism, existing between the material world-process as a whole and a hypothetical world-consciousness. Universal parallelism is interesting and important to the historian of philosophy because it was held by Spinoza; but it has no interest for the logician of the present day. Our business is with mind as it is manifested in individual persons. Spinozism has nothing to do with individual persons. The absolutely fatal objection

against Spinoza is that he cannot explain how the world-consciousness, which is supposed to exist parallel to every feature of material process, has been broken up into the individual consciousnesses which we know.

Individual psycho-physical parallelism is the only kind with which we are practically concerned; and, because the question whether consciousness has agency stands upon the threshold of logic, and because the psycho-physical parallelist theory is advocated by at least one contemporary writer of the highest standing, I propose to examine it as thoroughly as I can. Frankly, I think it a tissue of false assumptions and absurdities; and these appear the plainer the more definitely and precisely the theory is enunciated.

Let us put the theory into schematic form; thus expressed, it runs as follows. Among all the interacting physical substances of the world we can distinguish an indefinite number of small groups of substances of a special kind, *i.e.* brain substances, which may be symbolized by letters thus:  $Ba, Bb, Bc, Bd, \dots$ , the letter  $B$  symbolizing their general character as brain-substances, and  $a, b, c, d, \dots$  symbolizing the individual groups (*i.e.* brains of persons) into which the substances are organized; each of the groups,  $Ba, Bb, \dots$  having a series of transformations  $Ba_1, Ba_2, Ba_3, \dots, Ba_n$  symbolizing the series of vital transformations from birth

( $Ba_1$ ) to death ( $Ba_n$ ). Now the distinguishing feature of the  $B$  substances consists in this, that in all their transformations they have parallel to them in each group a counterpart set of facts (one cannot call them substances) of a totally different kind, *i.e.* conscious facts, which are different in each group, and interact as within the group, but do not interact as between the groups. These other facts let us symbolize by a parallel set of letters,  $Ca$ ,  $Cb$ ,  $Cc$ , ..., and speak of them as the  $C$ -series or the conscious counterparts of the  $B$ -series. Thus in the series  $Ca_1$ ,  $Ca_2$ ,  $Ca_3$ , ...,  $Ca_n$ , each member of the series after the first is acted upon by the member immediately preceding, but no member has any influence upon any member of another  $C$  group,  $Cb_1$ , ...,  $Cb_n$ , though their  $B$ -counterparts may interact. The term 'parallel' as applied to any series  $Ba_1$ , ...,  $Ba_n$  in relation to  $Ca_1$ , ...,  $Ca_n$  means that each  $B$ -member has correspondent to it a  $C$ -member, but that no influence passes from the  $B$ -series to the  $C$ -series or conversely. It only remains to be added that the  $B$ -substances are not, as might be supposed from their unique quality of possessing  $C$ -counterparts, substances *sui generis*; they are just ordinary substances (without similar counterparts) which pass freely in and out of the  $B$ -category. Thus a molecule of water in a tumbler has no  $C$ -counterpart; let it be absorbed into a living stomach, it

has still no counterpart: but let it pass upward into the brain; then suddenly in combination with molecules of phosphorus, carbon, etc. it enters the *B*-category and begins to have a conscious counterpart, and continues to have a series of counterparts till it leaves the brain and passes out of the *B*-category. The boundaries of the *B*-category are very difficult to fix in respect both of space and of time. A molecule of water in one of the cerebral ventricles will probably not be in the *B*-category; but, if it be absorbed into an adjoining nerve-cell, it will pass into the *B*-category and have a conscious counterpart. Or, again, it may happen that a molecule of water in the brain may be in the *B*-category and have a conscious counterpart, but that by a sudden transformation (insensibility or death) it may suddenly pass out of the category and cease to have a counterpart.

No advocate of psycho-physical parallelism can deny that, even when presented in bare schematic form, it is a complicated and difficult theory. The weakest point in it is the marvellous and useless character of the conscious counterparts. By what miracle are they made and kept parallel to the cerebral series? And what is the good of this parallelism? On general teleological grounds we ought to be sceptical of any alleged fact which is both useless and unique; psycho-physical parallelism seems to go counter to every principle of teleology.



Now let us consider the details of psychophysical parallelism. What is meant by affirming that there are two *series* or *chains*, the conscious and the cerebral? Is it right to say that conscious states do form a series or chain, if we leave out of account the objects with which the conscious agent is conversant? Consider the conscious states connected with writing the last few lines. The writer resolves to write (symbolize this by  $Ca_1$ ), immediately he catches a whiff of scent from the flowers upon his table ( $Ca_2$ ), he sees the paper before him ( $Ca_3$ ), he takes hold of his pen ( $Ca_4$ ), he hears the clock strike twelve ( $Ca_5$ ), he moves his pen with the writing action ( $Ca_6$ ), he is conscious of the purport of the words written ( $Ca_7$ ). Now do the items  $Ca_1$ ,  $Ca_2$ ,  $Ca_3$ ,  $Ca_4$ ,  $Ca_5$ ,  $Ca_6$ ,  $Ca_7$ , form a series or chain in the proper sense of those terms? Surely not. A true series is a row of items combined on some principle of progression; a chain consists of links united by some form of intelligible connection. Now when the items enumerated above are taken merely as a conscious series, there is no thread of intelligible connection uniting them. If they are taken as states of a conscious being interacting with his environment, they are intelligible enough; the connecting principle is, of course, the principle of cause and effect. But there is no causal connection between the conscious states taken by themselves. The resolution to write ( $Ca_1$ ) is not

the cause of the whiff of scent ( $Ca_2$ ), nor is  $Ca_2$  the cause of the agent's seeing the paper ( $Ca_3$ ), and so on.

Now take the physical side. Can we affirm the existence of a cerebral series? Evidently the same difficulty confronts us again. The successive brain states have no thread of causal connection running through them. Some of the brain states may be caused by preceding brain states; but most of them are caused by changes in other parts of the body, more especially by impressions coming from the outer world through the organs of sensation. And there is a further difficulty which does not occur on the conscious side. Consciousness is a perfectly definite area; the aggregate of its successive states is clearly distinguishable from the whole region of the non-conscious. On the other hand, the brain is not a perfectly definite area; as a physical object it cannot be rigidly marked off either from the rest of the nervous system, or from the non-nervous lymphs and tissues which are conterminous with it. We can treat the brain as a definite area only in so far as we regard it as an organ of consciousness. Cease to regard the brain as an organ of consciousness, and you have no longer a definite area whose changes can be regarded as forming a definite chain or series.

For these reasons, then, I would argue that we must reject the first assumption of psycho-physical

parallelism; 'there are two series, the psychical and the physical.' The two alleged series do not exist.

Consider now the term 'parallelism.' Let us grant, merely for the sake of argument, that there really are two series  $Ba_1, \dots, Ba_n$  and  $Ca_1, \dots, Ca_n$ . What is meant by saying that they are parallel? The word, of course, implies a spatial metaphor; and geometric parallels show the following main characteristics: (*a*) the lines are alike in their sensuous quality, *i.e.* they are both marks upon a plane surface; (*b*) they are separated by a constant interval; (*c*) each of them is continuous; (*d*) they are about the same size or bulk; and (*e*) nothing appears in one which is not represented in the other. Now the psycho-physical parallels have none of these marks. (*a*) They are of utterly disparate intrinsic quality. If it be absurd to say that the grunting of a pig is parallel to the flight of a balloon, or that the pleasure of poetry is parallel to the forty-seventh proposition of Euclid, because there is no quality common to the alleged parallels, the absurdity is far greater with the cerebral and the conscious series. (*b*) There is no constant interval; because consciousness is not spatial, nor has it direction and position in any system which also includes the cerebral changes. (*c*) One series, the conscious, is not continuous; it is broken by frequent gaps—sleep, and toxic or

traumatic insensibility. (*d*) There is no exact correlation between amount of brain-activity and amount of conscious activity: cerebral agitation may increase the volume of consciousness up to a certain point; but beyond that point it tends to obliterate it. Some rough concurrence of fluctuation there certainly is, but nothing to deserve the name of parallel. Finally and most important of all, (*e*) it is an utterly unfounded assertion to say that everything which appears in one series is represented in the other. We have no warrant in physiology or in psychology for asserting that every process in the brain is represented in consciousness; and we have every reason for denying that everything in consciousness has a parallel in the processes of the brain. I will not delay the reader by rehearsing the arguments which go to prove that volition, emotion and feeling-tone have no nervous correlates which can be regarded as parallels; it is enough to adduce once more the argument based on the prospectiveness of consciousness. When a man thinks of what may happen to-morrow the prospectiveness is an essential part of his thinking; but how can prospectiveness, as such, be represented in the processes of the brain?

This term 'parallel' suggests yet another kind of difficulty, why the psychical series should concern itself with the physical, as it does in the act of cognition. If, as is alleged, the psychical series

runs along in self-contained parallelism, why does it reach out towards the physical? Why and how does it form the notion that there is another series in existence proceeding parallel to itself and separated by an unimaginable interval? This difficulty does not arise on the interaction view; if mind and matter interact it is intelligible that one should know the other. But if they do not interact, what occasion is there for this knowledge?

Finally we must press home an objection mentioned briefly a few pages back: What possible use can there be in the parallelism? Geology tells us that the material structure of this planet existed long previous to the appearance of life upon it. In those pre-vital ages, then, there was one sort of series only, the physical. But at the moment when life appeared, another totally different sort of series began to manifest itself, running parallel for various periods to certain sub-series within the total physical series, but never touching them or exercising any direct influence upon them. What a strange, irrational, inexplicable fact! Why did this fifth wheel add itself to the coach of Nature?

By way of summary let me put the case against psycho-physical parallelism into the briefest possible form. Firstly, the alleged two series, the physical and the psychical, do not exist, *as series*; secondly, if they did exist, they would not be parallel; thirdly, if

they were parallel, no one would know it; fourthly, if they did exist, were parallel, and everybody knew it, no one would be the better for their parallelism.

It is fairly evident that psycho-physical parallelism is not a theory which really stands upon its own merits; it is a complicated and clumsy proposition offered by faint-hearted psychologists to scientific materialism. As far as I am aware, scientists will have nothing to do with it, and it is open to the objections of the philosopher no less than epiphenomenalism.

§ 4. The alternative to these anti-dynamic theories is Interactionism, the doctrine of common-sense, on which men have always acted and always will act in practical affairs—in medicine, for example, and education and the administration of justice. The speculative objections to it seem to me illusory. Professor Stout says: “The physiologist in his endeavour to make organic processes intelligible, by connecting them with the general order of physical nature, cannot but regard the presence of a factor (*i.e.* consciousness) which does not enter into this order as a most serious stumbling-block, which may upset all his calculations.” The answer to this is that, in respect to the behaviour of living individuals, the physiologist has made no calculations whatever; he cannot calculate the behaviour of a frog, much less that of a man. Until

the calculations exist, it is premature to protest against our upsetting them.

Another objection is that interaction is inconceivable, because mind and matter are so different that we cannot imagine how the former acts on the latter. There are two answers to this; the first is that we do not know ultimately how anything acts on anything else. The impulse which one billiard ball gives to another is at bottom quite mysterious: readers of Lotze's *Metaphysic* will remember that he tries every way of representing such an action in sensuously intelligible terms; and, failing, feels compelled to conclude that physical action is not "transeunt" but "immanent," that is, caused by a sort of sympathy within a perfectly integrated spiritual system. In short, show me *how* a stick moves a stone, and I will show you how mind moves brain. The other answer is that the action of consciousness upon nerve is not more impossible than the action of nerve upon consciousness, which is generally admitted to occur. Every scientific man (who has not been debauched into psycho-physical parallelism) believes that a nervous stimulus causes, for example, pain, which is certainly a conscious fact. And, if there is action from nerve to consciousness, there is no impossibility in action from consciousness to nerve.

But all the problems of the relation of the spiritual to the material are being lightened by our

increasing knowledge of the wonderful qualities of matter. The hard little atom, inert and uninteresting, is a conception which the world's science has left far behind. The most advanced scientific men are giving up the conception of matter altogether and replacing it by that of energy. Atoms are forces, then; consciousness also is a force. The two are not alike; but to view them under the same dynamic category lessens the difficulty of conceiving their interaction.

§ 5. If we accept interactionism, a further step is inevitable, the step which Mr McDougall calls animism; in other words, we must adopt the hypothesis of the soul. It seems to me impossible to decline the hypothesis, if we attribute power to consciousness. Where there is power there must be a source of power; and the soul is nothing but a conception whereby we represent to ourselves a unitary and relatively permanent source of power in conscious beings. The epiphenomenalist positively denies the soul: the psycho-physical parallelist does not need it<sup>1</sup>. But I hold that a true logic is impossible without animism.

The animistic theory which I am advocating implies a larger conception of the extent or compass of our psychic life than has prevailed in the past. Pagan thinkers spoke of the soul as something very

<sup>1</sup> Cf. Stout, *Groundwork*, p. 8. "To the psychologist the conception of a soul is not helpful."



weak and shadowy, as a slender breath of no great importance—*animula vagula blandula*. Scholastic discussions assumed that it was simple and indivisible; a simple point of spirit, as it were. All this is quite mistaken: reflection upon familiar mental facts shows it; and, if that does not suffice, we have the assurance of recent research in hypnotism and mental pathology. A human soul is very large, composed of many parts which normally work together so that they appear a unity, but may be dissociated pathologically so that they are evidently separate, or even stand in mutual opposition; it has various levels differing in the various degrees of awareness which they possess; it has many faculties and functions, some of which are understood more or less clearly, while others are still unexplored; its activity is incessant, potent and multiplex; it is subject to growth and decay, and its perfection is the result of a long process of development and ripening; it shows in its present condition traces of the past, and carries with it the record of an adventurous life, a record which the psycho-analyst has recently taught us to unroll. The body is a most extensive and complicated machine: it is the work of the soul to manage it; and we may assume that the soul has faculties adequate in magnitude for the work.

The doctrine of the wide extent of the soul is evidently in harmony with idealism. Idealism

means that mind is prior to and explains the world as we know it; and this involves the further doctrine that mind has constructed and supports the fabric of the world. But what a power of construction—like a Demiurge! What a power of sustaining—like an Atlas! What a wealth of faculties in the human soul, correspondent to the richness of the world! What incessant and enduring activity!

And, if the soul is a big thing, then the mental sciences, including logic, are bigger than writers of the past would lead us to suppose. The old fashioned logic was very exiguous. Take such a book as Thomson's *Laws of Thought*, which was the standard treatise only fifty years ago—what a little it contains: some desiccated "laws of thought"; two or three formal chapters on conception, judgment and syllogism; some neat remarks on the way these doctrines are to be applied. On the other hand, consider the facts to be explained: how wonderful is the intellect even of the humblest savage; how immense the evolution which produced him; how numerous and subtle the connections which link the understanding to the other provinces of the soul. I do not speak of the mighty and complex edifice of natural science; it is plain enough that the principles of such a book as Thomson's do not suffice for that. Logic is often spoken of as a study which

is quite exhausted and effete; it seems to me a study which has all its usefulness before it: the old logic, as Bacon might have said, is by far inadequate to the richness and subtlety of the human intellect which it professes to explain.

## CHAPTER III

### NOESIS<sup>1</sup>

§ I. After these preliminaries we may now begin the inquiry into the nature of understanding. I propose first to establish the proposition that there is a non-sensuous element in understanding, which is predominantly active in character. The sensuous and relatively passive element may, I think, be taken for granted; the most absolute of idealists will now admit that sensation counts for something in the mind. My opponent is he who says that sensuous experience is everything.

The existence of the non-sensuous element can be shown in many various ways; the best, perhaps, is to adduce some case of invention. Consider some very simple constructive act such as a child could do; for example, arranging little blocks of wood upon the nursery floor into the semblance of

<sup>1</sup> In this chapter I am especially indebted to Prof. Stout; but his theory of "noetic synthesis," which formed the starting-point of my own speculations, is of much more restricted scope than the theory of noesis in this chapter.

a cottage. Here in addition to the sensuous element—the shades and colours and so forth—there is a non-sensuous element in the child's consciousness, the constructing of the pattern. The sensationalist certainly may assert that the pattern-construction also is sensuous; but the assertion is destitute of all proof: such construction has none of the characters of sensuous experience as they will be set forth in the succeeding chapter; nor is it connected with any definite sense-organ.

All through our experience we find an element analogous to this pattern-construction. This will be plain as soon as we learn to view experience in the right way. Our intellectual life is not continuous and steady, like the smooth flow of treacle from a jar; but rather a series of efforts with distinct boundaries: speaking broadly we may call it the cognition of various series of patterns. What 'pattern' signifies may be well explained by adducing a case of auditory pattern, such as a simple melody. Let us imagine that we are seated indoors writing and that suddenly a street-organ strikes up a catchy tune. Having some slight knowledge of music we stop to listen, and follow the tune right through; when the last note has sounded, we feel an end has been reached. If the organ strikes up another tune, we have the sense of something fresh begun. Such an experience is typical of our intellectual process generally; except

that ordinary patterns do not begin suddenly, like the tune of the street-organ, but are linked to one another by rational connections.

What the relation is between the non-sensuous and the sensuous element of understanding may be well seen also in music; music is a 'pure case' which shows the relation without complication. The non-sensuous element is related to the sensuous as form to content or material. In a tune the relation is plainly of this kind. It is plainest if we take as example a man composing a tune. The tune in the composer's mind is a totality with definite boundaries and a definite beginning and ending; in it we can distinguish the arrangement or pattern which the composer invents, from the notes which are the content or material arranged. The two elements must be different, since each may vary independently of the other. A melody remains the same though the notes are all changed, as in transposing from one key to another; it ceases to be the same when the notes are differently arranged, as in a melody played backwards.

All this applies equally well to acts of understanding generally. In a simple perception, such as my recognition of the pen which I look for on the table, we can distinguish the apprehension of the various component colours and shades from the apprehension of the form of the pen. And we can

have a practically identical pen varying infinitely in its sensuous character.

Different words are appropriate for different examples of this non-sensuous element of understanding. For the toy-cottage 'pattern' perhaps is best; for the musical example 'form'; 'arrangement' and 'system' are general terms covering all possible examples. As a rule I propose to use 'form.' Sometimes we construct form, as in composing a tune; sometimes we apprehend it, as in learning a tune. I propose to use 'cognize' and 'cognition' conventionally to cover both constructing and apprehending. To put the matter shortly, then, the non-sensuous element of understanding is the cognition of form. W-

It is time now to give a distinctive name to this non-sensuous element of understanding which consists in the cognition of form. I propose to call it Noesis, for reasons which will be stated presently.

The foregoing distinction of form and content has been made on the side of the subject; we can make a parallel distinction on the side of the object. Consider a piece of music as a series of objective sounds; there also the form or melody is clearly distinct from the notes which are the material or content of the form. It is in virtue of their form that the series of notes has a noetic character, that is, a capacity for being understood as a melody.

A similar distinction can be made in regard to every possible object of understanding. Take any intelligible object at random, the pen with which these words are written. The form, system, arrangement, plan or noetic character of the pen is not less real and important than its sensuous character. There is less need to labour this point since it has been one of the chief arguments for idealism since the days of Plato.

§ 2. Before going further it is important to emphasize the all-pervasiveness of noesis and noetic character. Take first the subjective side; in all our experience there is noesis wherever there is system. Thus all purpose is noetic, and what a field that covers; every rational act, every rational moment of our life is informed with purpose. All meaning is systematic; every intelligible sentence which we utter, every rational thought which we think, exhibits system. Purpose and meaning cover much of our experience, but system is wider still. We may see this from the ordinary use of the term, understanding. We say that we understand a piece of music, or the rhythm of a complicated dance, or the movements of a game of skill in the sense that we can do them. The common element in these different kinds of understanding is that in all of them the agent grasps mentally a form, or plan, or arrangement, or pattern, or rhythm. 'System' covers all the cases.



Now take the objective side. Every object that has any sort of system has noetic character. Is there then any conceivable thing which is destitute of system? We cannot say that there is; because, however unintelligible it may be to us, some greater intelligence might understand it. But it is easy to instance things which are unintelligible to human powers; things, for example, which change too fast for our senses to observe accurately, and in ways which bear no relation at all to human interests. Such things we should call utterly chaotic. And there are many things which, without reaching this limit, are relatively formless. But if a thing is in any degree intelligible, to that degree it may be said to possess meaning or form or system.

At this point in the exposition of noesis it may not be amiss to offer a defence of the term, which is new and may possibly be regarded as superfluous. Why not, some one may ask, be content with the general terms 'mind' and 'mental process'? The answer is that we want 'mind' to signify the soul as the subject which does acts of understanding, and 'mental process' or 'mentation' to signify the general action of the soul as concerned with understanding. 'Understanding' could not have been used instead of noesis, because it should be taken to include not merely the active and formal element, but also sensation and image, which are

the passive and contentual element of understanding. 'Knowledge' would not have served, because it leaves out the constructive side: a thing exists and we approach it and get to 'know' it; we should not apply the term 'knowledge' to the invention of a tune or of a machine. And yet acts of invention are of primary importance for the theory of understanding. A similar objection would apply to the use of 'thought.' Moreover, both 'knowledge' and 'thought' are unsuitable for such mental acts as those which are at the basis of physical skill; in which, as we shall see presently, there is a noetic element.

The term which is least unsuitable and which might possibly have been used is 'intelligence'; but, as the term 'intellectualism' shows, its import is too passive; we do not speak of a creative mind as specially 'intelligent.' To use the new term 'noesis' is less troublesome than to re-define 'intelligence' and to guard continually against its misleading associations. However I shall frequently use 'intellectual' and 'intelligible' as adjectives corresponding to noesis and noetic character.

§ 3. The next step is to determine the relative importance of the noetic and the sensuous elements of understanding. Is the sensuous element the essential element, and the non-sensuous something less important? If a sensationalist admitted the

existence of noesis at all, this, I suppose, is what he would maintain. But the truth, I argue, is very different. Both elements are necessary to understanding as it exists in mundane creatures; every intelligent creature must have both sensuous experience and noesis. Nevertheless we are justified in giving the primacy to noesis and terming it the essential element. This can be proved in various ways. I propose to prove it by raising the question, What constitutes the practical difference between intelligible and unintelligible experience? // —

The most noticeable character of our intelligible processes consists in this, that they form coherent groups which can be retained and recalled. Mental processes which are unintelligible and destitute of meaning, such as men experience in confused dreams, delirium, drunkenness and insanity, have no coherence and pass away immediately beyond recall. Some light is thrown on this matter by experiments on mental retention. Meaning has a vast influence on one's power of memorizing. An exact numerical statement of the influence is hardly possible; but according to one experimenter it is eight times easier to learn a series of words which makes sense than a series which makes no sense. These laboratory experiments are welcome; but even more striking to my mind are examples from music, such as the experience of listening to a musical composition which is utterly beyond us. 1)

Musical sounds which are not understood do not form a totality : when they begin to be heard there is no sense of beginning a train of interest ; and when they cease there is no sense of completion. If re-heard after an interval they would not be recognized, and any change in them would pass unnoticed.

Noesis then is a principle of association. But is it the sole or even the chief principle ? If there are various other principles accounting largely for the intelligibility of our experience, then the claim of noesis to be the essential element of understanding cannot be established. It goes beyond my purpose to argue that noesis is the sole principle of association ; though I think an excellent case might be made out for that. But I do maintain that it is the chief principle. I hope to prove this by showing in a succeeding section that other principles which have been proposed have not the peculiar character of noesis, and therefore cannot do the associative work which they are alleged to perform. It has been the great fault of our traditional English philosophy that it has adopted a false doctrine of mental association, which has had a bad influence on the development of mental science in general and of the theory of knowledge in particular.

§ 4. The next stage of my argument brings me to the main topic of the present chapter, the

peculiar character of noesis which justifies us in calling it spiritual. It is this peculiar character which enables noesis to do the work which it actually does; and, if it is not recognized, a true theory of understanding is impossible. My doctrine is that noesis is total-working, as opposed to part-working. What this means, and why it is important, I now proceed to explain. 2

Let me recall my previous description of human experience as composed of patterns. Some of the patterns have definite beginning and ending, such as the tune which was played by the street-organ: others run on indefinitely, like endless patterns upon a moving band; such as the great abiding purposes which dominate extensive tracts of our life. How, then, is pattern or system cognized? Now there are two ways in which we may imagine an intelligence to work; piece by piece—that is the part-working way; or at a single stroke—the total-working way. The difference of the two ways may be illustrated from the learning of some simple trick of physical skill. It is currently supposed (though I doubt the supposition) that performing animals learn their tricks part-workingly. Thus, if the trick consists of five stages, the trainer teaches the animal the first stage, the second stage, and so on, linking one stage to the next till the animal has learnt the whole series without any consciousness of it as a whole. This is what the

animal is supposed to do; but a man on the other hand would certainly learn the trick in the total-working way. He would get a general idea however vague of the whole performance; perfect learning of the trick would consist in full elaboration of the total system with which he began. In other words the man works noetically; the animal works, or is supposed to work, otherwise.

Although recognition of the total-workingness of understanding is so necessary to logic, the part-working theory has been traditional in England. The principles of Contiguity and Similarity, with which our national thinkers have tried to explain mental association, are part-working principles. In 'contiguity' the elements of a system *A, B, C, D* are supposed to cohere because *A* is, or has been, contiguous to *B*, *B* to *C*, and so on; there is no recognition of any enveloping totality. For convenience' sake I propose to call this way of explaining mental association 'associationism,' and to contrast it with its opposite, the noetic theory.

That pattern or form or system can be cognized only as a totality is plainest in the most typical and important kind of cognition, Invention; but the fact can be discerned with sufficient clearness in other kinds of cognition also. It will be the task of later sections to show how the total-working theory explains the various operations of under-

standing, and how much better it is than the part-working theory. But before embarking on the task it is necessary to refute associationism.

§ 5. The easiest way of making the refutation is by putting forward a clear case of pattern-cognition which cannot be explained in the part-working way. The case is one which has served already in former pages. Let us examine what happens in the apprehension of melody. Imagine a man with musical gifts who hears a tune for the first time, say "Bonnie Dundee," and understands it so that he can reproduce it without further hearing. This power of reproduction, I hold, cannot be explained by associationism and can be explained by the noetic theory.

According to the part-working theory, the understanding of the tune and consequent power of reproducing it consists in the establishment of connections between the several notes, so that each note brings up into consciousness the next succeeding one. Let the series of notes be *A*, *B*♭, *C*, *D*, *C*, and so on. Then in learning the tune it is supposed that an adhesion is produced between *A* and *B*♭, *B*♭ and *C*, and so on; so that, given *A*, we can start off smoothly and reproduce the whole tune. Such is associationism; and I believe it to be utterly worthless as a principle of mental explanation: this musical example, in particular, is manifestly beyond it. But before proceeding to show this,

let me review briefly the various ways of stating associationism.

In asserting that an adhesion is produced between the notes *A* and *B* the associationists are evidently using a shortened form of speech. As objective existences the two notes cannot, of course, adhere to each other; what happens is that some associative process goes on in the mind of the agent whereby he views the notes as connected in relation to this particular melody. Now the mere statement that the two particular notes are associated does not tell us how the association is effected; but only that it is effected between particular existences. There are three current explanations of the mode of association.

The old familiar explanation is the 'ideal.' Of every distinguishable thing in our experience we are supposed to have a separately existing idea, an idea of note *A* and of note *B* and so on; and in a musical association the idea of one note becomes attached to the idea of another note. This 'ideal' associationism has been thoroughly riddled by criticisms long since familiar to every student. A very short consideration is enough to show that the alleged separately-existing ideas are utterly mythological. The idea of note *A* has no more substantive existence than has the audible note *A* struck upon the piano. What exists on the objective side is the piano, which possesses such a



structure that certain aerial vibrations can be produced by means of it, and, on the subjective side, the thinker's mind, which has such a structure that it can do those acts of understanding which we call the ideas of note *A* and note *B*. The audible notes cease to exist as soon as the vibrations have died away; and ideas cease to exist when the mind of the ideator has ceased to attend to their objects. /

The tendency of contemporary thinking is not very favourable to the 'idealism' which I am criticizing, and therefore it may be dealt with somewhat briefly. There are two forms of it, one which regards the mind as making these ideas, the other which regards the mind as finding them ready-made. The former is the more difficult. The operation of making ideas is utterly mysterious. How does the mind make them? What does it make them of? What becomes of the ideas when the mind has done with them? Thus most people who still believe in the substantive existence of ideas prefer to hold that the mind does not make them, but finds them. But here again some very difficult questions must be faced. Where does the mind find them, and how? Where did the ideas exist before they were found? Have they existed from all eternity, and if so, where were they before human life appeared upon the earth? What induces them to enter human minds? Why should just those ideas enter

the mind which do actually enter it, and not others? Again, where does the mind keep its ideas when it does not want them? How does our stock of ideas exist when we are asleep? Then, we want to know about the changing of ideas—everyone, I suppose, would admit that they do change; and if the mind makes them, there can be no difficulty about its being able to change them. But if the mind does not make ideas but finds them, how is it able to change them? Or do ideas change all of themselves, undergoing mysterious self-caused processes of inner transformation? Finally, do ideas last for ever? If not, how do they become extinct? Do a man's ideas perish with him, as the Psalmist thought; and if so, how does his death manage to affect these separately-existing entities? If, as many of the associationist expressions seem to imply, the mind is nothing but a sort of empty room which ideas walk in and out of, why should the disappearance of the room cause the total extinction of its occasional occupants?

Such are a few of the questions which are provoked by the attempt to treat ideas as having a separate and substantive existence. The difficulty of the relation between the mind and its ideas has caused a tendency among supporters of the substantive idea to dispense with the mind altogether and to argue that ideas have existence apart from all human consciousness. If a pro-

position is true, says one supporter of this line of thought, what do we gain by adding that anybody thinks it? But to my own mind this new sort of Platonism is nothing but a *reductio ad absurdum* of the substantive existence of ideas.

Another kind of associationism is to regard the mental contents associated, not as ideas, but as images. "The mind," said Alfred Binet in an early book which he outgrew before his death, "is to be regarded as a polypus of images"; in other words, thought consists of a procession of images and the mind itself is nothing else but this procession viewed as a whole. But recent research into the psychology of the thought-processes, to which Binet himself later made admirable contributions, has discredited this line of explanation by showing that images have quite a subordinate part in thinking. Men differ enormously in power of imagery with no corresponding difference in thought-power. And the same image may represent the most various thoughts, while the same thought may be represented by the most various images. Furthermore there is overwhelming evidence, verified by laboratory experiment, that indisputable processes of thought go on without any images at all<sup>1</sup>. The true relation of imagery

<sup>1</sup> Reference may be made to a recent book by Mr Francis Aveling, *Consciousness of Meaning*, in which these researches are summarized and carried further.

to thought I hope to explain later; enough to say at present that imagery is an adjunct, an indispensable adjunct, of thought, but not thought itself. The notion that the mind is a polypus of images will not stand the test of facts for a moment.

The third form of associationism is one which has more to say for itself than the other two; it has more scientific warrant and is held by many physiologists. Its purport is that mental association is based on neural association: our perception of note *A* depends on the stimulation of certain cerebral elements in the auditory region of the cortex; and the association of note *A* with note *B* depends on the establishment of an association-path between the two sets of cerebral elements. In short, what are associated are not ideas or images, but nervous structures. Now there are evident difficulties in this theory; for one thing, it runs far beyond our present knowledge of cerebral histology. But there is some experimental support for it in the behaviour of animals from which the cerebrum has been removed; and at any rate it furnishes a basis, though perhaps not the best basis, for physiological research. It deserves to be treated with respect and, if I have decided to reject it, that has not been for want of careful consideration. I believe we are fully justified in saying most positively that neither it, nor the other forms

of associationism, will explain a mental connection such as exists between the notes of a melody.

To put the matter briefly, the fact which is fatal equally to the ideal, the imaginal and the neural explanations of musical association, is simply this: the particular notes, *as particulars*, are not associated at all in any way. A man, let us suppose, hears "Bonnie Dundee" played over once and understands it so well that he can reproduce it at will. He hears it, say, played on the piano in the key of *F* and reproduces it by whistling in the key of *Fz*. Now the principle of connection which enables him to do this cannot possibly lie between the notes as particular existences; because the notes in the reproduction are not the same as those originally heard: they are different in loudness, pitch and timbre and are produced by a totally different set of movements. This argument is equally cogent against all the three versions; the particular ideas are not associated, the particular images are not associated, the particular neural structures are not associated. The argument seems to me especially crushing as against the neural version; because that is the most mechanical. If nervous structures representing notes *A, Bb, C, D, C* have been excited successively, how does that explain the subsequent faculty of exciting successively other nervous structures representing notes higher in pitch by a semitone?

The noetic explanation seems alone to be adequate to the facts. The melody of "Bonnie Dundee" does not consist in any particular series of notes, but in a certain auditory pattern; the pattern depending mainly on the fact that notes succeed one another at certain intervals. Any note in the scale may be selected to begin the tune, but the next note must go up a certain distance from the first note, the third a certain distance from the second and so on. So also with other patterns of different orders; a spatial pattern of wooden blocks upon a table remains the same pattern though the blocks be changed, provided that the relations between the blocks are preserved. The pattern then is the essential thing: it is apprehended as a whole; and its apprehension as a whole determines the association of the parts.

Associationists work with two main principles, Contiguity and Similarity, the relation between which they leave utterly obscure: sometimes one operates, sometimes the other; but why one and not the other in any given case, and why not both at once, is never explained. However, it is evident that contiguity is the main principle, and that similarity is only an occasional substitute or coadjutor. It is impossible that similarity should have any place in the musical example just quoted; there the associationist must rely wholly upon contiguity. And it is contiguity alone which I have undertaken to

refute above. What there is to be said about the principle of similarity may be reserved to a later opportunity, when I shall have occasion to distinguish between systematic and intersystematic association.

§ 6. Such is noesis. It is a non-material function because no material object can cognize form; it is a spiritual function because cognition of form is on a higher level than sensation.

A theory so extensive cannot of course be proved by a single example, but only by elaborate trial over the whole range of facts. I propose now for the rest of this chapter to explain it further by showing how it works in some of the most important facts. The most important of all and also the most interesting I take to be Invention. Convenience of exposition led me in the last section to adduce the apprehension of a melody; but invention is really more typical.

Any one who asserts that invention is total-working or begins with the whole is evidently putting forward what many would hold to be a paradox, namely, the assertion that a whole can be cognized antecedently to its parts. Professor Stout raises this question in his *Analytic Psychology* (1. 72) and answers it with a "decided negative." "Where there are no parts," he says briefly and without argument, "there can be no combination of parts either in fact or for thought<sup>1</sup>." This

<sup>1</sup> I interpret "combination" as formula of combination.

he regards as evident to common-sense. Unfortunately common-sense is quite inadequate to the subtlety of mental science. It is easy to show by unquestionable examples that this apparent impossibility does continually happen. Indeed, if a man could not cognize a totality without cognizing its parts, he would not be a rational being at all.

For illustrating invention let me go once more to music, where these principles are illustrated with all the purity that we can desire. Imagine a composer composing a song-tune; this act must be total-working, not part-working. The melody must flash into his mind at once; he does not find the first note which he wants, then the next and so on. He first of all reads over the words of the song, then thinks a shorter or longer time, perhaps chatting with a friend meanwhile; then all at once 'gets an idea' and dashes it off on the piano. If the whole is not in his mind when he strikes the first note on the piano, what is it that determines the first note to be struck? If there is no whole there, the note must be struck at random. But in composing, surely the first note is never struck at random; the composer's finger moves to it with certainty. But, granted the first note, how upon the part-working theory does the composer proceed? Either the first note, *A* for example, must suggest another note which is pleasing, or else he must fumble about till he happens upon a



second note which makes a pleasing effect with *A*. These alternatives are equally absurd. *A* must, in the composer's experience, have been combined with almost every other note on the keyboard in various pleasing effects; while a competent composer never fumbles, but plays off his composition with readiness and sureness, noticing a jarring note at once if he strikes one by accident.

Possibly the common-sense objector may recognize the absurdity of the part-working theory and yet still draw back from that which I am advocating. He may protest, 'How can a man have an idea for a melody which contains no notes?' The answer is that we can know the formula of a totality without knowing any of the parts of the totality; *e.g.*, we know that the sum of any decreasing infinite geometrical progression is  $\frac{a}{1-r}$ , whatever the first term *a*, and the ratio *r*, may be. So also we can have the formula of a curve without knowing the curve as any actually existing line. And so also I suppose we can construct the formula of a tune without hearing or imaging its component notes. It is this tune-formula, as I contend, which flashes in its totality into the composer's mind.

Our hypothetical opponent may, however, not be satisfied. He may say 'All formulae of mathematical progressions and of curves are abstracted from actual progressions and curves containing

concrete and antecedently cognized parts. What you maintain is that the pure formula is apprehended prior to the concrete matter.' Well, I do maintain this. I know that it is difficult to understand; but then all mental processes are difficult to understand: the more deeply you study the world the more wonderful it proves to be; and of all the things in the world the human soul is the most wonderful. The appearance of paradox in my argument is quite superficial, and what might seem strange to a thoughtless mind proves to be a universal law. But the paradox in the contrary theory is real, and grows greater the more closely we study its consequences.

The foregoing argument is of the same kind, only stronger, in regard to the invention of devices. Imagine a man thinking of a machine for doing an old process in a new way—how can he think first of one part and then of another? The parts are not parts at all except in relation to the invention as a whole. Such a case is different from the musical example where the composer must make his composition out of a fixed number of given notes which may be regarded as 'parts' antecedent to the formation of the tune. The elements of the invention are taken from an indefinitely wide field and their individual boundaries as parts are determined by reference to their place in the totality. Still more effective for my present argument is the

case of a new scientific principle. When it comes into the mind of a philosopher that the world-process may be regarded as "an integration of matter and concomitant dissipation of motion during which the matter passes from an indefinite incoherent homogeneity to a definite coherent heterogeneity," there are surely in his theory no parts which can be regarded as antecedent to the whole.

There are some qualifications and explanations to be made before we go further. I do not mean to say that the totality is so perfectly conceived by the agent that carrying it out in sensuous material makes no difference to it. Materializing a thought strengthens our apprehension of it enormously; as he strikes each succeeding note the composer's grasp of his theme must grow in power. But we must go further than this. Although we apprehend a notion in its totality we do not usually apprehend it complete. This is shown by the facts of pondering; after studying a question we often feel that we are in touch with the right notion, but cannot say exactly what it is, still less produce a definite plan. This does not mean that we have got hold of a *part* of our plan: we have the whole; but the plan is vague, containing so to speak a number of more or less variable quantities which we cannot adjust satisfactorily. Or perhaps a visual metaphor may help us. Imagine a man looking at an illuminated magic-lantern surface which he is told will

grow into a picture: and imagine the central figure already in some degree visible but very vague so that, though he can say with certainty that it is not this or that, he cannot say with certainty what it is; while the outlying parts of the picture are mere indefinite shadings: and imagine the whole picture becoming more definite either gradually or by jumps, the unity of the composition in relation to the central figure becoming more and more apparent. This will be like the process whereby we gain mastery over an invention. Moreover, the term 'totality' is itself somewhat ambiguous. There are totalities which are so perfectly integrated that they are incapable of division; but most totalities can be divided into subordinate systems: for example, an ordinary musical piece contains several distinct phrases any one of which may be apprehended apart from the others. For the purpose of this argument a totality means any system which is grasped as such, whether it is destined to stand alone or to be combined into some larger system.

The other point, which may be mentioned briefly here, is that a pure noetic synthesis, though perfectly real, definite and effective, is essentially inarticulate. A composer feels that he has an idea for setting a song; but he cannot say what the idea is, to anybody or even to himself, till he has articulated it in sensuous terms. The inarticulate-

ness of noesis is really what accounts for the common-sense denial of the possibility of a partless whole. I will deal with the matter again towards the end of the chapter and will explain it fully in the next chapter when dealing with the place of sensuous experience in understanding.

§ 7. The theory of noesis has now been sufficiently elaborated to enable me to explain various aspects of it which are derivative from its peculiar character. Noesis is 'synoptic'; this term expresses its character on the side of the agent. The tune-inventor is like a spectator who embraces a wide field of vision with a momentary glance. This is the difference between the big and the small inventor; one sees much at a glance, the other little. The synoptic range of the greatest inventors is extraordinary, almost incredible. Mozart asserted that he could cognize a long complicated composition all at once; not in succession, like common men. All great schemers in every department, all great geniuses in short, have this amplitude of vision. All works of art, pictures, poems, romances, even scientific treatises, may be judged on this basis. Do they show unity of plan? Were they 'forged molten'? as some one has expressed it. Works that are halting in purpose, disconnected, diffuse and digressive are products of intelligence below the first rank.

Noesis is 'schematic.' This term may be used

in reference to the object as well as to the subject; that which is noetized also has a scheme or form. 'Scheme' and 'schematic' are equivalent to 'form' and 'formal'; but are preferable for some uses because less ambiguous terms. The noetic scheme of a mechanical invention would be its essential formula expressed in the purest way, like, for example, the algebraic formula of a quadratic equation,  $ax^2 + bx - c = 0$ .

Noesis has a third quality for which, there being no term available, I am forced to use a new term, 'coactive'; by this I mean that, having invented or apprehended the essential formula, the agent's mind is able to collect and marshal the details for its realization. This is apparent in the musical example where the composer assembles the notes which he wants, rejects one and introduces another for the better rendering of his idea. Music is so very much an affair of 'gift' or 'inspiration' that it is not a very good example to illustrate 'coaction.' We see it better in those noetic processes which are the purposes of ordinary life. When a man forms the design of making a long journey he does not wait passively for thoughts of the things which should be done and provided to trickle into his mind; he sets his mind actively to work assembling the thoughts which he requires.

These various noetic qualities of synopsis, scheme and coaction are all implied in the one

epithet 'total-working.' A totality just means that which can be 'synopsed' or seen-at-a-glance, and is also schematic or 'formal.' As for 'coaction,' any concrete totality which is the work of the mind must have been assembled or elaborated from a central idea. The special appropriateness of 'total-working' lies in calling attention to the fact that the mind's work is done by flashes or instantaneous strokes. This is so in all discovery; in the discovery of any new principle, or invention of any device, or creation of any artistic form. Every invention is preceded by a want or desire; what Locke calls 'uneasiness.' This want continues more or less definitely till suddenly the agent feels that he has got the right idea to satisfy it. Then he proceeds to elaborate the idea so that he can satisfy the want.

§ 8. The total-working theory of understanding is part of the general dynamic view of the soul. Now most logicians are men engaged in teaching, and the tutorial profession is by no means favourable to dynamic views; its bias is to pay more attention to docility. Hence a tendency to take as the type of mental action, not invention, but receptive apprehension, that is, the learning of things delivered by others. Perhaps this explains in some measure the prevalence of the part-working theory. For receptive apprehension lends itself to the part-working fallacy more easily than invention.

But even receptive apprehension is, at bottom, total-working also. Take a simple example, the apprehension of the spoken or written sentence. Such a sentence as 'Where are you?' consists of words spoken successively, and each word has some sort of meaning by itself. Superficially it may sound reasonable to say that in apprehending the sentence we add to 'where' the meaning of 'are,' and then that of 'you,' and then subjoin a note of interrogation to complete the sense. But surely this is not the truth. What happens rather is that the beginning of any inquiry suggests more or less definitely the total purport of the speech, and this totality is further defined as words are added. The most recent speculations on the origin of language confirm this view; it is now held that language began with the sentence-word or holo-phrase, which was a single complex sound expressing a total situation interesting to the agent. A very familiar sentence like 'Where are you?' is practically a holophrase, though it is made up of separable parts; its total import is apprehended at once; for the first word has not dropped out of present consciousness before the last word is heard: if the process of apprehension was ever one of stages, the stages have become telescoped indistinguishably. But take a longer sentence, 'When are you going to get that suit of clothes done which you promised for last week?' Here we may reasonably



distinguish stages. The first is that the interest of the person spoken to is aroused and his attention captured; spoken to a tailor by a customer the sentence would naturally arrest immediate attention. The total apprehension begins as an awareness that a business-question is being put; the word 'when' shows that it has to do with time-relations, and the succeeding words add further determinations till the system is completed. The whole process is not one of adding part to part; but a process whereby a totality receives further and further determination.

We may go on to illustrate this principle by the cases where we have difficulty in apprehending. We may understand perfectly every separate word which a man is saying; but as a whole he may be totally unintelligible, because we do not know what he is 'driving at.' So with a difficult system of philosophy such as the Hegelian: when you get the point of view it is easy enough; or rather, you see that the difficulties of detail matter very little: but, failing the point of view, the most intelligent man may read Hegel's *Logic* more than once and yet be none the wiser.

The conception of a totality seized at once and then further defined seems to lend itself better to the theory of teaching than the widely-current conception of an apperceptive mass of ideas. On Herbartian principles the business of the skilful

teacher is to link new ideas on to the apperceptive mass already existing in the pupil's mind. Having no belief in the substantive existence of ideas, I am bound to reject the 'apperceptive mass.' Even if we did accept it, there is much obscurity as to the way in which it operates. On the other hand the theory just advocated is straight-forward enough. The teacher first considers in what way the subject to be taught can be made to appeal most effectively to the pupil's known interests; then he gives a general account of it with a central idea specially related to those interests; then he fills in the details, not elaborating fully any one part in isolation from the rest.

§ 9. The facts of mental retention also support the noetic theory of mental association. Let me mention two of the most significant. One is the importance of meaning for memorizing. Other conditions being equal we remember things better the more meaning they have for us. A four-line stanza of good but simple poetry can be learnt at the first hearing; an equal number of words making no sense would need many repetitions to memorize. So it is with all other mental contents in which any sort of system can be apprehended.

The other fact is that we remember much better when we give attention. This is seen very clearly in the memory-experiments which consist in learning by heart rows of nonsense syllables. If full atten-

tion is given, a row of twelve syllables can be learned in about ten repetitions; if attention is withheld as much as possible the number of repetitions needed is increased four or five fold.

Both these facts harmonize with the noetic explanation, especially the first. The learning of the single stanza cannot depend on the attachment of the separate words to each other; the words of the poem cannot have been heard in just those combinations before. Some of the words will probably have been heard before in combination; others not. Moreover, if the associations were between the words separately, a single hearing ought to produce great differences in the degree of connection between the various words in proportion to the number of times they have previously been heard together. But this is not so; all the words of the stanza will be remembered with equal facility, so long as the lines are equally sensible. Evidently the meaning forms a general scheme which is apprehended as a whole and acts as a framework under which the details are subsumed. In the learning of poetry we sometimes meet intelligent children with weak sense of rhythm who can reproduce easily the sense of the lines but not the exact order of the words.

The second fact, the importance of attention, also supports the noetic theory. If one word sticks to another by particular adhesion, it is difficult to

see how giving attention can make any difference; the words ought to stick together whether we give attention or not. If memorizing here also depends on form or system, the importance of attention is easily explained; as I hope to show presently.

The view of mental retention which is, perhaps, most widely accepted just now is that there are two distinct principles at work in the human mind, one of which is rational or non-mechanical, and the other mechanical<sup>1</sup>. Such is the doctrine of Professor Stout and of Mr McDougall. Professor Bergson on the other hand holds that all mental retention of the type of 'learning by heart' is mechanical, in other words is merely an affair of neural habit. For my own part, I see no reason to believe in more than one principle of mental retention. Professor Bergson's doctrine is so evidently biased by his metaphysical theories that it cannot have much weight with psychologists and logicians. Professor Stout, who has not dealt with the matter since the publication of his *Analytic Psychology*, was then in the position of having just discovered a non-mechanical principle which he called 'noetic synthesis,' but apparently did not feel certain how far it would supplant the old mechanical principles. Mr McDougall, in whose

<sup>1</sup> Cf. Mr H. W. B. Joseph's recent paper in *Mind* (N.S. No. 78, p. 176). "The so-called association of ideas...is a mere mechanical process and for that very reason not rational."

*Body and Mind* the two-principle theory is advocated, makes no attempt to demarcate the respective spheres of the two principles, and would, I am sure, find the utmost difficulty in demarcating them. As a principle of mental retention this alleged mechanical association seems to me to be quite illusory. The cases adduced in support of it can be explained by noetic association; while there are facts in those cases which prove that the association is not mechanical.

The cases which lend themselves best to the mechanical view are just those memory-experiments with nonsense-syllables which have been mentioned above. Here, it will be said, there is no possibility of learning by apprehension of meaning, meaning being carefully excluded by the conditions of the experiment; the memorizing must depend entirely on connections between nervous elements in the brain of the observer. An initial difficulty in the acceptance of this explanation is the importance of attention for memorizing. This fact goes to show that the memorizing depends on something for which attention is necessary.

I believe that this kind of memorizing depends on the noetic apprehension of form or system just as much as any other kind; but that the form is not obvious, as in a bit of poetry, and that therefore attention is specially needed to apprehend it. To make the matter more concrete, suppose the

observer to be set to learn the following series of 12 syllables: heuf, powz, gők, jeel, shōb, toov, fis, wawch, rāx, quyg, bem, zāb. Immediately on starting to memorize he establishes a rhythm in calling over the syllables. This is generally the simple one-two, one-two, rhythm; the syllables arranging themselves in pairs, so that *heuf* joins itself to *powz* and *gok* to *jeel*. These 6 beats form the framework of a pattern, and the task of learning is that of fitting the different syllables into their places in the pattern. At the outset the observer memorizes the position of the first syllables in the pattern; very soon afterwards, or even simultaneously, he memorizes the position of the last syllables; the intervening syllables take longer; but at last they all get fitted in. Now this is consistent with the total-working theory, but not with the part-working theory. As care is taken in such experiments to exclude any disturbing influence and to call the syllables over evenly, the connections should on the latter theory be produced *pari passu*, and there could be no reason why the first or last pair of syllables should be learned before the others.

The quality of the various syllables in relation to their places in the rhythm is the most important element in the pattern; but there are others beside. Fanciful meanings can be read into syllables; *heuf-powz* sounds huffy and puffy, *gok-jeel* suggests something out of the Old Testament, and so on.

The hardest syllables to memorize are those with specially odd and unfamiliar combinations of letters to which nothing definite can be attached. But, apart from all these helps to forming a pattern, the vowels and consonants themselves make a certain arrangement. Even if no element of rhythm or fanciful association be introduced, we can by long and close attention seize the literal arrangement as a pattern and so memorize the series.

There are one or two additional facts about memorizing which strengthen the foregoing explanation. The first is that learning a series forwards is little or no help towards learning it backwards. This is the more noticeable in series the more they have the character of meaning or system. Not one man in ten thousand can say the Lord's Prayer backwards, and not one in a million can whistle 'God save the King' backwards. And yet, if our knowledge of these series depended on nervous connections between the parts, one would expect that the establishment of very strong connections forwards would be helpful towards the establishment of connections backwards. The next fact is that increase in the length of a series causes an altogether disproportionate difficulty in memorizing. Six syllables can usually be memorized by a single calling-over; but a dozen syllables might require a dozen repetitions, while eighteen syllables might require twenty-five repetitions. The reason for

this is that six syllables form a pattern which is well within the synoptic glance of an educated mind; but eighteen syllables are unwieldy, and the details need laborious filling in. The most significant fact, however, is one which is probably unfamiliar to the general reader: it is that if we want to learn a long series, say of 20 syllables, we must learn it right off in one block, although that is apparently the most laborious method; it is no use to try to divide it, learning it in two or three blocks and then joining the blocks together. Now on the part-working theory this seems quite inexplicable; on the total-working theory it explains itself. To memorize 10 syllables means establishing a pattern; to turn from them and memorize 10 other syllables involves the establishment of a fresh pattern which switches the mind off from the first pattern—breaks up the first pattern, so to speak. Of course it is not impossible to learn both patterns so thoroughly that one does not interfere with the other; but this requires a greater effort than to make one pattern of the whole set of 20 syllables.

Another case which is interpreted as quasi-mechanical association, especially by Professor Stout, is that of remembering events in the exact order of their happening; as opposed to the faculty of selecting what is essential. We cannot approach this case with the advantages which are gained from



the results of careful experiment; but then it is evidently one which gives but little support to my opponents. Consider the facts. An old woman of low intelligence sees a motor-car accident, and tells the tale of it so loaded with meaningless detail that no one can make out clearly how it happened; on the other hand an intelligent spectator will make us understand all about it in a tenth of the time. Now the part-working theory assumes that a single experience has caused such solid associations in the stupid old woman's mind that she is utterly at the mercy of them, and must tell her tale with no intelligent control over its course. Surely this implies an extraordinary sensitiveness and receptivity in the old woman's nervous system, or whatever it is which is at the bottom of these rapidly-formed associations. The intelligent spectator, on the contrary, seems to be much less impressionable; or if, as we are almost compelled to think, the associations are made in his mind, he has the capacity of destroying or neglecting them. All this is so improbable that I think the noetic theory is better here also.

The difference between an intelligent and an unintelligent person is a difference in noetic power. The former has a great stock of syntheses, has had great practice both in synthetizing and in analyzing, and is ready to form new syntheses of many various kinds; the latter is wanting in all this. Now an

intelligent man, who sees a street accident, grasps the pattern of events as they actually happened in all its concrete fulness. He could tell the whole tale if he wished; but in ordinary relation that is not advisable. To suit the special interests of his auditor he breaks up the unwieldy primary pattern and reconstructs a smaller and more manageable one in relation to some central point of interest. But the old woman is wanting in these noetic gifts; she is at the mercy of the primary pattern and laboriously tries to convey it without an effort at selection; or more probably follows a number of confused half-formed subordinate patterns, digressing here and there without reference to the central subject of the story.

§ 10. The facts of recalling and forgetting furnish some further illustrations of the various ways in which the human mind works with its noetic systems. A typical case is that of a man trying to recall a scene for the purpose of giving evidence. At the time of happening, it may be, he paid only moderate attention to it; his grasp upon the primary pattern is therefore weak, and still weaker is his apprehension of underlying systems, for example, the motives of the actors in the scene. Later, when called on for evidence, he becomes desirous of recalling the scene as fully and vividly as possible. Then he rehearses the primary pattern, fills up gaps in it and restores as far as possible its decayed

and faded outline. At the same time he makes it more intelligible to himself by analyzing it and then reconstituting the underlying or subordinate systems.

Consider another case of recall in which the process of decay has proceeded yet a stage further. Such a case is that of searching for a temporarily forgotten name, which is nevertheless felt to be 'on the tip of one's tongue.' The usual explanation of the process of recovering the name is that the agent thinks of all the things which lie contiguous to it, so that their associations with it may drag it to the surface of consciousness. Thus does William James explain the matter; but he adds a fact which is specially significant from my point of view. The place of the thing sought for, he says, is a gap; but it is an "aching gap." Here, as always, James' insight was better than his theory. Why does the gap ache? The part-working theory cannot tell us, but the total-working theory can. The meaning of 'aching' I take to be that we are not entirely ignorant of the name, but know its pattern vaguely; as that it begins with B, has three syllables, and so on. We can say with certainty that it is not this or that, though we cannot say what it is. There is more than one way of trying to recall a name. We may treat the name as an element in a larger pattern; that is, rehearse various scenes in which the man played part and so recover

the name; or we may treat the name itself as a pattern and try to complete its vague outline. In either case we have something vague before the mind which obstinately refuses to define itself satisfactorily; and this tantalizing experience, I think, is what James meant by his "aching gap."

I may mention yet another case in which decay has proceeded still further, and not even an aching gap remains; a case from music. It often happens to a man of strong musical taste but weak ability that in listening to an opera he hears a new song which interests him at the moment, but vanishes so utterly from his mind that he could not recall a note when he has left the concert-room. After an interval however, it may be a day or more, the tune begins to 'come back'; rather vaguely at first, but soon more definitely, till at last he recovers it all. The interesting point here is the condition of the agent's mind from the time at which the singer ceased to the time when the tune began to come back. For all the positive evidence the agent could produce, the tune has totally disappeared from his mind; and yet it could not be utterly gone, otherwise it could not come back: for we have given up the idealist mythology which makes ideas into substantive existences with the power of walking in and out of the mind. I believe that the agent retained all along the noetic formula of the tune, without being

able to articulate it; and that by virtue of the formal retention he is able subsequently to recall the notes.

It is impossible to say exactly when the process of decay is complete and a thing is totally forgotten. So long as we take any interest in a class of things or scheme of things, we remember something about it; that is, we retain the pattern in more or less vague outline. Only when all interest, all possibility of action and emotion have disappeared, does the pattern vanish. It is marvellous, by the way, how little we do forget. We may become proficient at a game, then lay it aside and feel as if we have forgotten all about it. But if we take it up again it all comes back very quickly. For the first few times we are helpless; but soon feel at home once more.

There are some kinds of forgetting which show very clearly the predominant importance of the formal element as opposed to the details which are embraced by it. One obvious example is that of routine cases whose pattern is thoroughly familiar; here it is impossible for all but the most retentive minds to retain much of the detail. Such detail indeed would be utterly useless, and forgetting is merely a healthy rejection of the superfluous. These cases show that retention is not determined solely by the closeness of the attention given to the original experience; the process of shaving needs

close attention from the most experienced shaver. But while we remember the pattern of the process thoroughly, the various occasions of shaving are not interesting and are therefore forgotten.

The last kind of forgetting that illustrates noesis depends upon the curious process which is known to psychologists as 'repression.' Something unpleasant happens to a man; an event or scene occurs in which he is humiliated or suffers loss. Now if the incident is finally closed so that there is no call for the man to worry over it, he usually dismisses it from his thoughts; or, to use the psychological term, he 'represses' it, as a system. This implies that he inhibits the various elements which go to form the objectionable system. Now these elements may enter into other combinations and be components of other systems which have nothing objectionable about them. But the repression of the objectionable system may affect these elements so that they cannot be remembered readily as elements of other systems. Thus may we explain many odd lapses to which we are subject. A man may misquote some well-known lines:

A *cowslip* by the river's brim  
a yellow *cowslip* was to him,  
and it was nothing more.

And the explanation may be that he has lost money on a race-horse belonging to the Earl of Rosebery.

The point of interest in this case is the position

of the objectionable system while it is being successfully repressed. Apparently it has vanished altogether; actually it is present and active, as is shown by its inhibitory influence: the arts of the psycho-analyst will avail to recall it into full consciousness with all its power. This shows the potency of a noetic system even when it is relegated to the lower depths of the mind.

§ II. Before going on to show the range of noesis I must end the business of showing how the noetic theory offers a complete alternative to the old associationism and explains the kinds of association which really occur. It has been proved above that mental contents do not cohere in the mind as particulars, in the way that burrs stick together, by their individual powers of attachment, but as components of a noetic totality. Let us symbolize such a totality by  $\Sigma_1(A, B, C, D, E)$  where the Greek letter means the comprehending synthesis and the English letters the components. Now in this totality there are two kinds of association, between  $\Sigma_1$  and the components, and between each component and  $\Sigma_1$ . The two kinds of association explain respectively what the old psychology called association by contiguity and association by similarity. Both these terms are misleading and the principles which they imply are illusory. In their place I would suggest the terms 'systematic association' and 'inter-systematic association.'

Systematic association is the familiar straightforward kind. Suppose a man engaged upon a scheme, represented by  $\Sigma_1$ ; then  $\Sigma_1$  is associated with all the components,  $A, B, C, D, E$ , necessary to the scheme. Let the scheme be some simple matter, as a plan for a morning's golf. Then so long as the agent is keen upon the scheme, the presence of it in his mind ensures the presence of all the details necessary for the execution. This is systematic association, and it depends upon the maintenance of attention. If the agent's attention slackens, the operation of the other kind of connection becomes possible, leading to what I would call inter-systematic association. For some of the components of the first system may have formed part of some other system  $\Sigma_2$  ( $D, F, G, H, J$ ). If then the agent be not following out keenly the plan  $\Sigma_1$ , the component  $D$  may switch his mind off to another line of interest in virtue of its association with  $\Sigma_2$ . For example, a man in preparing for his day's golf may pick up a pair of shooting-boots, and these may remind him of a good day's sport enjoyed the week before. Here the association is between a component and a synthesis; and the recall of the synthesis  $\Sigma_2$  may cause, in virtue of the connection between  $\Sigma_2$  and its own components, the recall of many other components belonging to  $\Sigma_2$ ; so that in the midst of his golf-preparations the agent goes off into a reverie which has nothing



to do with the business in hand. Such a case as this would show a failure of power in the agent, and would be almost pathological. But inter-systematic association has an indispensable function in relating together the various systems of which our life is composed. All analogies are examples of inter-systematic association.

In previous sections I attacked the part-working theory of understanding by showing that all the currently advocated forms of it are impossible; I might have proceeded in another way by showing that a truly part-working mind would be in a condition of lunacy. In our daily life every object which we commonly use has a myriad associations. We are able to use familiar objects because our purpose of the moment submerges all their other associations. Suppose we want to cut a piece of string and spy a carving-knife which we proceed to use. If the carving-knife called up all, or even a few, of the objects with which it had been contiguous or to which it is similar, we could never use it for the string. It is because we are not at the mercy of such associations that we can act as creatures of rational purpose.

§ 12. Hitherto in this chapter I have illustrated the working of noesis by considering mentation in relation to the future, the present and the past. For we may take invention as the most important example of the mind's prospective

attitude; while receptive apprehension and retention are concerned respectively with the present and with the past. But now I wish to study noesis in a different way, as exhibited in various levels of understanding; beginning with the higher, where it is most unmistakable.

In the highest level, that of thought and knowledge, noesis under one name or another has been recognized from the first by the deeper schools of philosophy, which have always seen that no sort of mechanical theory will explain the distinctively human forms of understanding. It would be easy to write the history of idealistic logic, from the Platonic theory of ideas down to its most notable development in our own time, Professor Stout's theory of noetic synthesis, as a series of more or less successful attempts to express various aspects of noesis. But this by the way; let us proceed.

Thinking is a vague and popular term, too vague to be of much use in exact philosophizing; but in its commonest use it denotes revolving schemes for the guidance of conduct, or ruminating over experience in order to appreciate more fully the meaning of the past. We think over plans for a voyage, or for making an important investment; we think over a man's past conduct at some conjuncture, and wonder what motives prompted him to say what he did; we think over the facts of knowledge, endeavouring to distinguish

its various conditions. All these are reflective processes; and, if the present discussion demanded an exact terminology throughout, I would argue that the term 'thought' should be replaced by 'reflection.' In reflection we should distinguish analysis from synthesis. Synthesis is, of course, the primary process; imagination, creation and doing generally must come before taking to pieces. The former is more the quality of the man of action whose doings we study; the latter is more the quality of the student and the expositor. All reflective processes are evidently noetic; whether synthesis or analysis, they are not sensational and they are total-working. In planning a voyage, for example, we are dealing with objects, not in their sensuous particular qualities, but in their arrangements, relationships and proportions: the steamer is of no particular size, nor is the harbour; but steamer and harbour must stand in certain relations to each other, and so on. When we are thinking over such problems as the place of sensation in knowledge we have no special sensuous material before us at all; we are engaged with noetic systems which are themselves components of a noetic system.

It is equally plain that in thinking we are always engaged with totalities. Suppose that we are planning a voyage; then the voyage as a whole is present to our minds, giving meaning to the

several details which we rehearse. In a philosophical argument upon the sensationalist theory of knowledge, it is necessary that there should be a consciousness of the whole problem behind everything which we say. This synoptic consciousness embraces what is technically known as the field of discourse; it implies an enveloping system which must never be forgotten by the parties in an argument; and the sub-systems which are the result of analysis must also be relative thereto.

§ 13. Turn now to knowledge; this again is a vague term which needs a little defining. For the sake of brevity I propose to speak only of human knowledge. There are very many different sorts of knowing; but I think that the common element at the bottom of them all is the sense of *at-homeness* which is felt when we deal with an object which we know. Take some diverse cases; a householder knows his own house; an old servant knows his master; a professor knows his subject. In each case the essential fact is a sense of familiarity, a readiness to deal with the object in the proper way whenever the appropriate occasion arises.

The sense of at-homeness is a matter of noetic apprehension. The simplest of the cases just cited, the knowledge of a house, is schematic knowledge; it has to do with a sensuous object, but is not itself sensuous. However the house may come to our notice, by hearing its name, or by seeing a picture

of it, or by walking up to its front-door, we have the same feeling of mastery over a system. The sense of mastery or at-homeness may not be accompanied by anything sensuous whatever.

The higher kinds of knowledge are so evidently noetic that few words are needed for my argument. One's knowledge of ancient history, for example, has to do with systematic objects, patterns, arrangements and relative proportions; and it is brought into action by any appropriate cue. The Roman historian's knowledge, say, of the Emperor Domitian is called forth by anything which suggests that epoch; by a coin, or by a phrase of Tacitus. What comes into his consciousness may or may not have sensuous admixture; but it is always essentially a scheme.

There are still some eminent thinkers who advocate the sensationalist explanation of knowledge, and say that primary or perceptual knowledge is all a matter of sensation and that secondary or reflective knowledge is all a matter of imagery. There are plenty of arguments against sensationalism in general; but against its theory of reflective knowledge there is this one invincible fact: that the imagery, which ought to be there, isn't. In thinking about a house which we know, we do not, as a rule, observe any inrush of revived sensational experience; still less does this happen in thinking of such a non-sensuous object as the Platonic

philosophy. Our sense of mastery in either case is not affected for better or worse by any images which may happen to arise.

§ 14. The noetic theory serves equally well to explain perception; I see no reason for the sharp difference which is commonly made between perception and the higher kinds of understanding. Take a simple example of perception, 'There's a dog'; I do not mean, of course, the verbal assertion, but the perception of the dog as it flashes into the mind of the observer. Such a mental act has all the qualities of noesis: it is synoptic, schematic and coactive.

The perception is synoptic because we do not apprehend the dog piece by piece, but all at once. Even if the dog is partly hidden or dimly seen in the dusk, we apprehend it as a whole; not as a dog perhaps, because the data may not suffice for that; but as a smallish animal, or at least, as an object lying within certain limits of size.

It is schematic, because all our sensuous experience of the dog, all the lines and shades and colours which strike our eye, are arranged according to a certain schema—the dog-schema as each of us has preformed it. Suppose the object is dimly seen, so that we recognize it as an animal but not yet as a dog. Then some unmistakable feature becomes apparent, the tail for example. At once the dog-schema is awakened in the mind

and the visual appearance is apprehended in relation to it. It is in virtue of the schema that, while the sensuous material presented to the dog-observer may be infinitely various, yet 'dog' is uniformly perceived. It is visual objects that show most plainly the inadequacy of the part-working theory. A moving visual object never presents the same sensuous appearance in successive moments; and the same sensuous factors of visual perception are hardly ever assembled twice in the same arrangement.

The importance of the schema in perception is shown very plainly by experiments in artificial hallucination. When we are shown an ordinary human photograph we recognize the object at once as a face, subsuming the details under the schema which we supply from our own mind. But when a hypnotized person is shown a blank card and is told that it is a portrait of the King, a schema is by that suggestion supplied to him; under which he subsumes the minute details visible to his hyper-æsthetic eye on the apparently plain surface of the card, and so makes out the royal countenance which he has been told to see. This hallucination is, as Binet says, merely an extreme and abnormal case of what happens in ordinary perception.

Perception is also coactive; by which I mean that we are not limited to what is before us, but can conjure up detail to complete the object. The

added detail may become part of the effective perception of the object, so that we treat the object as if it had the detail; though the latter may be out of direct experience. For example, every rational adult who keeps a dog treats the animal as though it had an inside; though he may never have seen the inside of a dog. Deeper penetration is what distinguishes the perceptive power of the adult from that of the young child and, we may suppose, the perceptive power of the animal from that of man. The man comes to the object equipped with a schema vastly richer than that of the child or animal. And thus without the exercise of any reasoning or reflection he treats the object as having various qualities which he has never experienced by the senses.

Apart from this difference, which is a difference of degree rather than of kind, we are justified in holding that the perceptive power of animals is of the same kind as ours. The dog recognizes his master in various ways differing sensationally, by smell, by sight and by hearing; and yet every recognizable point of contact has the same meaning and prompts the animal to the same kind of behaviour. Part-working association will not explain the canine consciousness any more than the human.

§ 15. Next we come to that most elementary form of intelligent action which we call motor co-ordination. Here again, as Professor Stout has



shown, the facts cannot be explained on the old associationist principles. When we learn to ride a bicycle the sensations given by the infinitely various inequalities of the road cannot be so associated with the sensations of the various appropriate movements that the former directly suggest the latter. "The bicyclist may spin along while he is all the time attending to the scenery or to the talk of his companion. It is highly improbable that all the varying adaptations required for this process have been severally and separately provided for in the process of learning, and each so fixed by repetition as to be readily available at need." (*Analytic Psychology*, II. 72.) The basis of such a physical dexterity is noetic; the agent learns that certain proportionate arrangements of movements should correspond to certain proportions in the road-surface, gradient, force of wind and so on. There are exceptional people who can ride at once; and we must conclude that they have exceptional minds able to construct the motor patterns required without the laborious practice of the average man. Such minds are similar to those giants in mental arithmetic who can do long complicated sums in half a minute. In either case the establishment of part-working associations is impossible.

We cannot make any distinction of principle between the motor co-ordinations of men and those of animals. An animal dexterity which consists

in the same act repeated in exactly the same way under the same circumstances might possibly be explained by neural association. But what of an act infinitely varied in accordance with circumstances? Consider the dexterity of the hawk which lives on small birds caught mostly on the wing and never caught twice in just the same way. This compels us to trace the noetic function far below the animals usually classed as 'higher.' Not many years ago this would have been scouted as a paradox. But now the best observers are coming round to the view that there is no essential difference between the human and the infra-human mind; and that total difference of nervous organization does not necessitate total difference of consciousness. And so we need not shrink from the assertion that fishes and insects have noetic powers analogous to our own.

If these contentions are right we must give up the current accounts of habit which explain everything by neural modification. "The phenomena of habit in living beings are due to the plasticity of the organic materials of which their bodies are composed. The philosophy of habit is thus in the first instance a chapter in physics rather than in physiology or psychology." Thus wrote William James, comparing our human habits to the creases in clothing, the smooth working of a much-used lock, the folds in paper and other changes produced in material objects by continued use. What cannot

be doubted is that the nervous system has to be accommodated to the performance of habitual actions and kept in a state of efficiency. What I question is the existence of such neural systems as would account for the habitual doing of actions. It seems more probable that the permanent organization lies in the soul itself and that the neural arrangement is quite subordinate. Body and soul are related as piano and pianist; it is for the soul to play and for the body to keep in tune.

§ 16. It is an advantage of the noetic theory that it enables us to view the development of understanding as continuous through all its stages. The leading psychologists of our day, such as Professor Stout, make a sharp distinction between two main levels of intelligence, the perceptual and the conceptual or ideational. At the same time we are never told exactly what constitutes the distinction, except that in some way images are concerned in it. Animals, according to Professor Stout, are entirely upon the former level, while men have risen to the latter. This doctrine would have more plausibility if men were always on the higher plane, leaving animals permanently on the lower. But this is not so. Men evidently begin upon the lower plane in infancy, and constantly lapse to it when their minds are exclusively engaged with perceptual objects. How then does man in growing up from childhood make this 'mortal leap'

from the lower plane to the higher? And, when in maturity he is acting in a purely perceptual way, how does he pass from one plane to another and back again? Or does he proceed careering somehow upon both planes at once? Images cannot make all the difference between one plane and the other; for it is a doctrine of Professor Stout's, in which I heartily agree, that much of our thought is imageless.

On the noetic theory these difficulties do not exist: there are no sharply divided planes of intelligence; but rather a continuous development of psychic ability from the lowest to the highest. The main factor of intellectual development is increased power of noetic synthesis. Two modes of growth may be distinguished: the syntheses become wider, that is, they cover more objects and wider stretches of space and time; they become deeper, that is, penetrate further into the nature of objects. All these points may be observed by any one who will compare the conversations of children with those of grown-up, well-educated people. Most noticeable of all, perhaps, is the superficiality of the simple, who see only the outsides of things. The greater our science, the fuller of meaning becomes every fragment of this wonderful world.

§ 17. And one form of intellectual superficiality is to ignore the effect of the growth of knowledge upon the soul of the knower. We are encouraged

to think shallowly about knowledge by common phrases such as 'a well-stored mind'; as though the mind were a sort of barn quite indifferent to the quality of what it contains. The truth is rather that the acquisition of knowledge makes a change in the soul; a noetic synthesis persists as a psychic modification, not as an 'idea' stored up like a sack of corn. Here we have a hint for education; it does not consist in cramming things into minds, but in producing a change in the mind itself and thereby increasing its power. There is no need to try to abolish those popular but superficial phrases; it is quite enough to guard against misuse of them. The fact to keep in view is that the mind is unlike any object of which we have sensuous knowledge. Above all it is not spatial; indeed space has nothing to do with it: whereas the form of space dominates all our language and imagery.

The doctrine of association indicated in previous pages requires us to suppose that the process of experience produces an immense modification in the soul. The possibility of rational life depends on the fact that we have each of us an almost infinite equipment of syntheses by which we guide our conduct. Our faculties and habits of bodily movement, of thought, of will and of sentiment all depend upon acquired psychic conformation. But we must not think of the conformation under spatial forms.

§ 18. The spatiality of language and non-spatiality of mind have acted to prevent the recognition of noesis. Two other causes have cooperated, which are worth mentioning because of the light they throw upon the thing itself.

Noesis is inarticulate; by which I mean that it is not, as such, expressed in any sensuous content. The primary form of articulation is language—spoken word or gesture. Prior to language there was no call for articulation; man first articulated thought to tell his mind to fellow-men, not to understand himself. The use of interior language or verbal imagery is posterior to spoken language and is equally sensuous. Now when a thing is not articulate, is not sensuously expressed, and cannot be apprehended sensuously, it is very likely to be overlooked, or even positively denied to exist; as Hume denied the existence of anything which he could not call an impression or idea.

That noesis is inarticulate may be shown in the simplest way by adducing its commonest forms. Take the case of ordinary rapid conversation. Some one stops me in the street and asks, 'Are you going down to Convocation?' I answer 'Yes,' and we talk about it for a minute or two. Discourse of this kind may be perfectly rational and may express the agent's well-considered judgment; and yet probably he will have no articulate knowledge of what he is going to say before he actually says it.

I ask a man a question; he says 'Yes.' I say, 'Do you mean it?' He replies 'Yes, certainly.' Now the speaker must have meant his answer before he spoke it, as well as in the moment of speaking. His meaning pre-existed as a noetic synthesis; but it was not articulated by any the smallest expression of interior speech or other imagery. It is therefore easily overlooked by minds who do not like believing in anything which they cannot see or hear.

§ 19. The other reason for overlooking noesis has been the failure to see how understanding is implicated with passion, which is evidently total-working. It would be premature in this place to prove by an array of examples that every noetic synthesis has its passional side. But take some common example—'Are you going to resign?' 'Certainly not'; we repel the suggestion at once. The noetic synthesis which prompts the negative evidently has passion with it; how strong the passion is, can only be judged by the heat of the answer. So in every synthesis the intellectual and passional sides are clearly distinguishable, though neither is independent. Now the object of passion is always a totality. Consider some familiar desire. A man desires a round of golf; that is a totality made up of a great many components—striking the ball, walking, putting the ball into the holes and many others. The man's desire is for all these com-

ponents unified into a system, not for each component separately. Or take a more complex case, desire to obtain a certain appointment, a post in the Indian Civil Service for example. The agent does not desire the components separately—the work of administration, the travelling from village to village, the social position, the salary; he desires the whole. And this seems true of all desire as low as you please to go; down to the desire of a crab to catch and eat a fish.

The total-workingness of passion is so evident that, had its implication with understanding been recognized, everyone must have seen that understanding was total-working also. It is intellectualism that has obscured the true nature of intelligence.



## CHAPTER IV

### SENSUOUS EXPERIENCE

§ I. The term 'sensuous experience' is meant to include both sensation and imagery. As understanding is partly sensuous partly noetic, a discussion of sensuous experience is necessary to the present work. The discussion will throw further light upon my doctrine of noesis; it will also round off my case against sensationalism.

As I have said already, the relation of sensuous experience to noesis is that of content to form; noesis is the active and constructive element of mind, while sensuous experience is the material which is subject to arrangement. Other things indeed may serve as arranged material; the content of understanding is anything mental which can be arranged—sensation, image, emotion, volition, or even noesis itself. For a noetic synthesis may itself be synthetized, either with other syntheses, or with mental elements of other kinds. But sensuous experience is the chief content of noesis.

Of the two kinds of sensuous experience sensation is the primary, and imagery the derivative. A short explanation of each is called for; which in the main will harmonize with that currently adopted by psychologists.

Sensation, says William James, is "the immediate result upon consciousness of nerve currents as they enter the brain." The word "immediate" I understand to exclude such mediate results as feeling-tone or emotion. An ordinary sensation then, such as a sound, is caused by a physical stimulus impinging upon the auditory mechanism of the ear and producing an excitation which passes by an afferent nerve to the appropriate region of the brain. Thus the distinguishing mark of sensation is that it is due to a peripheral stimulus which invades the brain by a more or less lengthy afferent path. A hallucinatory sensation, such as a 'noise in the head,' is due to a morbid condition producing the same sort of brain-disturbance as normally arises from the invasion of a peripheral stimulus.

This account of sensation is in accordance with the view previously expressed that the soul is a force inter-acting with the body and, through the body, with the forces of the material world. Sensations are effects produced in the soul by the impact of material forces acting through the medium of the sense-organs of the body. Every sensation, however light and evanescent, is felt as a mani-

festation of force. How we are enabled to recognize objective force is a question on which psychologists are not fully agreed. It seems most probable that the sensational token of it is the passage of the stimulus from the peripheral organ through the afferent path on its way to the cortical centre. Sensations, then, are invasive; in Hume's phrase, "they strike upon the mind and make their way into our thought or consciousness."

§ 2. Whereas sensation is due to an invading stimulus coming from the periphery, imagery is due to stimulation of the brain from within. Thus the stimulus has not to traverse an afferent path to reach the cortical centre, and we have no impression of contact with external force. It is not a matter of bigness; a whisper is dynamic; the image of a thunderclap is not.

It is generally agreed among psychologists that imagery is a sensuous experience of kindred nature with sensation; and there is evidence to show that an image is conditioned by the same cortical structures as the corresponding sensation. Certain facts of pathology and hypnotism point definitely in this direction. If injury to a peripheral organ abolishes a certain class of sensations, the power of imagery still persists; for example, an adult who goes blind from injury to the eyes can still visualize; but, if blindness is due to cerebral injury, all visual images disappear. Again, there

is a neurotic disorder, apparently affecting the brain, which prevents the patient from seeing colour with one of his eyes, while the other eye remains normal. Such a patient cannot be made by hypnotic suggestion to experience a colour-hallucination with the colour-blind eye, though he may easily be made to experience a colour-hallucination with the normal eye. If the brain-structures for sensation were quite distinct from those for imagery, failure of sensation-power would involve no failure of image-power.

The difference between sensation and imagery comes out most clearly in their different relation to the will. Sensation comes to us: "the eye it cannot choose but see; we cannot bid the ear be still: our bodies feel where'er they be, against or with our will." But imagery is largely under control. Not all images, indeed, come just when and as we want them; the majority, perhaps, come 'of themselves' or 'by chance.' But we could not live a life of sanity unless we had much control over them, calling them into or expelling them from consciousness. All men have some control over visual images; some few have perfect control, imaging scenes at will and transforming them or holding them steadfast. All men have great control over verbal images. With a word-image, says Professor Stout, "one may do almost what one likes. We may repeat it thousands of times with unfailing

definiteness, precision and certainty; we may say it rapidly or slowly, with emphasis or without emphasis or with emphasis that varies; we may even invert the order of the sound with as much freedom as in actual utterance."

This matter of the control of imagery suggests the question how images are produced by internal stimulation. The stimulation must be of two kinds, produced by our will, and produced without or against our will. The most noticeable of the latter kind are those pathological cases in which we are a prey to the obsessions of fever; or, like St Anthony in the monkish legend, are persecuted by images which we abhor. How these images are produced and what determines their arrangement is a deep question which we are not called upon to discuss. The other kind, the volitional images, present a more obvious problem. What must happen is that the soul, knowing what images it wants, excites the appropriate brain-tract, which by reflected stimulation excites the images in the soul. The evidence of introspection shows that these images are due to the act of will; and yet not due directly to the act of will: for, unless the brain-structures are intact, the images cannot be produced.

§ 3. As it is the function of sensation to be arranged in formal syntheses, it must have intrinsic qualities which render it susceptible of arrangement.

Bits of stone can be formed into a mosaic, if each bit has a definite colour; but nothing can be done with bits which have no colour in particular. The intrinsic qualities of sensation can be enumerated most easily if we keep in view its production by action of the brain upon the soul; its qualities correspond to differences in the way in which the brain is stimulated by nerve-currents from the periphery.

(a) Sensuous quality is that quality of a sensation which distinguishes it in kind from another sensation. Sensations may be distinguished thus generically, as sight from hearing; or specifically, as red from blue. Sensuous quality depends on local difference in the brain-area stimulated; the visual centre is in quite a different part of the brain from the auditory centre, whereas the cerebral elements which responded to red and blue objects respectively are, apparently, contiguous. This quality of sensation is the most important of all; but, as it is also the most familiar and intelligible, we need delay no further over it.

(b) One sensation may differ from another merely in intensity, as when a note of the piano is struck softly or loudly. This we may safely assume is due to the degree of force with which an area is stimulated; in other words to the intensity of the stimulus.

(c) Another quality is due to the protensity of

the stimulus, that is, to the length of time over which it extends. The nervous system is very susceptible of fatigue, and a protracted stimulus produces an effect towards the end of its operation different from what it produced at the beginning. This is very noticeable in regard to visual sensations. A bright red surface looked at fixedly for several minutes changes colour, that is, appears much paler, owing to the fatigue of the observer's eye.

(*d*) Another quality is due to combination of sensuous stimuli. For example, note C on the piano has one quality, and note E another quality, and each stimulates a separate set of nervous elements. But when the notes are sounded together a new quality is made by the combination. This effect of combination is very noticeable in the sphere of taste: as Professor Stout has remarked, sugar has one taste, milk another and coffee another; but if these three substances are mixed in due proportions we get a flavour which could not have been anticipated from a knowledge of the separate tastes only. We do not know much about the causes which make the effect of combination of stimuli so different from the separate effects of the stimuli. In part doubtless the difference is not psychological at all; for the stimuli when produced simultaneously may interfere with each other and so become a quite different stimulus. When adjacent areas of the cortex are stimulated, it may be that the

excitement from one area spreads into the other and so a total stimulation is produced differing in quality from the separate stimulation of each area.

(*e*) Finally there is a quality of sensation which I feel a little doubtful about mentioning, though it ought perhaps to appear in an exhaustive enumeration; it is that which arises from stimulation of the brain as a whole rather than from stimulation of any definite area. Such a stimulation is the experience of shock when the head receives a violent jar, as in running against a lamp-post.

Here we have abundance of material to make patterns of. William James in one of his eloquent passages somewhere has drawn attention to the enormous complexity of the brain, to the countless number of distinct elements which it contains and to the infinity of the combinations into which those elements can be arranged. The brain, he says, is as various and unstable as the face of the ocean. Throughout the whole lapse of time in which our earth has existed, the ocean has never been stationary, nor can any wave-combination of its whole surface have occurred twice. So with the human brain. No brain is exactly like any other; mere superficial inspection of any group of anatomical specimens shows this: nor can we imagine that any brain-state repeats itself entire. Thus there is an infinite variety of neururgic pattern, and consequently an infinite variety of sensation-



pattern. Apart from serving as material of a pattern sensation has no use or significance for us; in this way alone can we know it. To cognize sensation unmixed is indeed a contradiction in terms: for cognition is always formal; and pure sensation, as wanting in the element of intelligence, is formless. Thus sensation is known to us only as an element in perception. It is true that there are overpowering sensational experiences, such as the pain of tooth extraction, where the intelligent element sinks to a minimum; but it is not abolished so long as consciousness survives at all.

§ 4. Sensation is at all stages of our life indispensable to understanding; but it is in the earliest that we see this most unquestionably. Sensation results from the interaction of our body with the forces around it. Animals are incessantly engaged in striving with natural forces, and such also is the life of the savage. Thus the natural man is perpetually engaged in attending to sensuous experience; failure to notice perceptual objects would bring speedy destruction upon him. And to a large extent we are still, all of us, natural men. It is in perception, especially in perception accompanied with effort, that our consciousness is most intense and life feels to us most undoubtedly real. The noetic forms and systems of primitive natural experience are concerned entirely with the sensuous life. The refined and artificial life is some way

removed from this; but not so very far removed, after all. All our intellectual experience has reference more or less to doing; it is anticipation of doing and plans for doing; or it is meditation and comment on what has been done. And all doing in the last resort involves physical doing; for the body is continually and indispensably present with us. And so the sensuous life is, as the Americans would say, 'back of all our other life' and is the final explanation of all our activity.

To allow all this is but to give sensation its rightful place in understanding. Idealists in the past have not known what to say about sensation. T. H. Green, as Professor Hobhouse somewhere remarks, gives no clear leading as to the rôle of sensation in our experience, except that it is something contemptible. This position, if position it can be called, cannot be maintained in the light of modern psychological knowledge. And yet these admissions leave us far from admitting the undue claims of the sensationalist.

One claim of the sensationalist is for the primacy of sensation. "Sensations," said William James, "are first things in the way of consciousness." This positive assertion of James' was quite unsupported by evidence; the assertion has been made so often and so confidently that he may have thought it self-evident. But in reality it is plausible only if we begin with the individual new-born

infant. The visual experience of the infant begins, no doubt, with visual sensations caused by objects which it subsequently learns to desire and to understand. But we ought not to begin with the infant; the infant has an immense racial history behind him, and comes into the world with a huge equipment of faculties. We must rather look at the race. Why does the eye of the infant see? Surely, because remote ancestors desired things for which seeing is useful. The senses of animals are relative to their wants; when wants are dropped, as with creatures whose habits become parasitic, the senses change, the sense organs disappear, and stimuli to which the organism previously responded are now totally neglected. The facts of degeneration are inconsistent with James' dictum. The priority of desire to sensation is true even of those sensations which to the individual seem most undesirable, the sensations of pain. Pain is now regarded by physiologists as having great value for life, inhibiting harmful actions and stimulating the organism to avoid harmful objects; and thus it necessarily implies the general desire of life. If we go back and back in imagination (we can go no otherwise) to the earliest beginnings, it seems that sensation cannot be prior to desire. But it would be easy to construct a metaphysical argument to show that desire must be prior to sensation.

§ 5. The chief claim of the sensationalist is one

which has been discussed in part already, the claim that all understanding is sensuous. I propose now to say something more about this claim; not for the sake of the polemic, but to elucidate further what place in understanding is held by sensuous experience and especially by imagery.

The claim of the sensationalist ought to be strongest in regard to the lowest stages of understanding, where the agent acts without reflection; if the sensationalist can maintain his thesis at all, he ought to be able to maintain it of the infant playing with his ball or of the dog chasing a rabbit. But can it be maintained of such cases with any show of probability? If unreflective understanding contains nothing but sensations, what determines the grouping or arrangement of the sensations? A dog chasing a rabbit has a train of sensations arranged in a certain order. Why did its sensations fall into that order and not into some other order which was equally possible? The common-sense answer would be that it was apprehension of meaning which determined the order; the dog saw the rabbit and, apprehending the meaning of what he saw, acted accordingly. But the sensationalist is precluded from this. If he does hold that the dog acts from apprehension of meaning, he must maintain that apprehension of meaning is itself a sensation; which seems to me a manifest absurdity. What sense-organ have we to perceive meaning?

He is therefore driven to argue that there is no such thing as apprehension of meaning at all.

But if meaning has no existence then the order of the dog's sensations must be determined by the part-working principles of Associationism. But is that really possible, in the case of a dog chasing a rabbit? A dog of sporting breed which has never seen a rabbit will learn how to chase one after one or two trials. Now are two trials enough to establish such complete associations that the sight of a rabbit will enable the dog to go through the whole series of chasing and catching with rapidity and assurance? Suppose the chase lasts three minutes; allowing two movements per second, we may estimate the whole process at 360 movements—a very moderate estimate. Will part-working association suffice to explain the dog's performance of this long train? We must remember that the experiences of a rabbit-chase are infinitely various. The whole process must be set in motion by the first sight of the quarry, and a rabbit when seen never presents exactly the same appearance twice; nor, when the chase begins, does the rabbit ever run twice in just the same way. Even the longest experience would not enable the dog to form such a train of associated sensations; the short experience which actually enables him to perform a chase is quite inadequate.

Nor is the case of the sensationalist strengthened

if he calls in anticipatory sensations to aid his theory. He may argue that the sight of the rabbit awakens in the dog an anticipation of the pleasant experience of seizing and tearing its quarry, and that this nascent excitement stimulates its efforts in the chase. Now it is quite probable that such a nascent excitement does actually arise; but I do not see how that helps the sensationalist argument. For how can this nascent experience (whether we represent it to ourselves as idea or image or neural stimulation) establish such connections with each of the 360 movements required in the chase that it can excite each of them in its appropriate order? Undoubtedly this nascent excitement may add to the meaning of the sighted quarry as a noetic synthesis; but it cannot act by stimulating part-working associations.

§ 6. But when the sensationalist maintains that all intelligence is entirely sensuous, he usually has in view that kind of intelligence which is popularly called thinking. Suppose the dog did think or used reflection when it chased the rabbit; then, he would say, the thinking must be sensuous; in other words images pass through its mind. The sensationalist doctrine is that thinking consists of that kind of sensuous experience which we call imagery. This doctrine I now propose to examine. It has some plausibility in itself, because imagery really has a great deal to do with thinking; and has

moreover behind it the authority of an important school of philosophy. The most recent advocacy of the doctrine is contained in Professor Titchener's *Lectures on the Experimental Psychology of the Thought-Processes*. This is an able and most interesting book, and yet gives one a strong impression of failure. The Professor proceeds on the assumption that thinking consists of images; in his own case mainly of visual images. And yet he never proves, indeed never squarely asserts, that thinking is entirely imaginal; nor does he meet squarely the many obvious and weighty objections to his doctrine.

The most fatal objection is that so much of our thought, I should say vastly the greater part of our thought, is imageless. The existence of imageless thought has been established by elaborate investigations in Germany and elsewhere. The usual course of these investigations is for the experimenter to set tasks needing thought to a number of observers, and then to ask them what images accompanied the performance of the tasks. The result has been to show that sometimes no image accompanies the thinking, and that such images as do appear stand in no definite relation to the thought. These laboratory experiments are most welcome and have contributed greatly to clear up the problem. But the simple fact that we mostly think without images may be observed by ordinary

introspection. Everyone has had the experience of engaging in some animated conversation which would rightly be termed 'thoughtful,' and cannot possibly be conducted on the 'merely perceptual plane,' or as a sequence of sensations: and yet in such a conversation images occur sparingly; in fact one may hear and answer several times with no image at all.

And the converse also is true; just as some thought is imageless, so some imagery is thoughtless. This occurs in purposeless reverie, and still more in the mental excitement of fever where unsought and meaningless images vex the sufferer's mind.

§ 7. When imagery does accompany thought, there is no definite relation between them. First as to quantity; we may have much thought and much imagery, or little thought and little imagery, or little thought and much imagery, or much thought and little imagery. Then as to quality; imagery may vary while thought remains the same, or thought may vary while imagery remains the same.

The qualitative independence of imagery and thought appears most plainly in pathological cases. Binet describes the case of a merchant who enjoyed an extraordinary visual memory and relied mainly upon it for conducting his affairs. In consequence of a severe nervous shock he lost his visual memory



for ever, and for the rest of his life had to do as well as he could with images of other kinds. Here the objects with which thought was concerned, business and family affairs, remained the same; but the images in terms of which the thought was expressed were completely changed. Simple examples of the same thing occur in common life continually. We may think of a friend by half a dozen images indifferently: or six children of a family may think and talk about their father, each one using habitually a different image; if the imagery were really essential they could hold no effective communication. The relative indifference of imagery is shown by the cases of the deaf-and-blind girls Laura Bridgman and Helen Keller, who were educated so that they communicated perfectly with their normal friends; and yet all their imagery was totally different.

The converse of all this, change of thought with persistence of imagery, is less common; because the thought is the main thing and the image ancillary. But the thing does occur. A curate may think of his rector with the image of an aquiline nose. Later he may become a rector himself and employ an aquiline curate; then the same image will serve for a totally different object. Common examples are the verbal images of ambiguous words; the image of the word 'slice' may have a totally different import according

as one is concerned with golf or with bread and butter.

The view which I have been developing, that images bear no fixed relation to the thought with which they are connected, is so far substantially in accordance with that of Professor Stout (*Manual*, book iv. ch. 1.). But then he persists in holding to the indispensableness of imagery in some sense which I am unable to follow. He says, "An idea can no more exist without an image than perception can exist without sensation." But why can't it? And, any way, what *is* an idea? Does Professor Stout use 'idea' as equivalent to 'thought'? Apparently not; since in the *Analytic Psychology* he proves the existence of imageless thought. In the *Manual* the two planes of human intelligence are said to be the perceptual and the ideational. On what plane then is imageless thought? Has it got a plane of its own; or does it manage somehow to be on the ideational plane, though by strict rule everything on that plane ought to be accompanied by imagery? Professor Stout goes on to say, "The image is only one constituent of the idea; the other and more important constituent is the meaning which the image conveys." So then the image is not so very important, and yet it is indispensable. I see many reasons why imagery is important; but no reason for calling it indispensable.

§ 8. To explain why imagery is important in understanding we must recall the fact that man is naturally and primarily a creature of physical action; and that therefore his consciousness is most intense when he is engaged with interesting perceptual experience. What a gulf there is between thought and action, between a scheme planned and a scheme executed, between a drama in manuscript and a drama on the stage. How weak and faint is even the most glowing imagination compared with the perceptual reality; how difficult for the most expert planner to foresee difficulties which start up at once as soon as actual working begins! Now imagery is a sort of faint substitute for sensation. The first idea for a plan is an act of imageless thought, which can only be tested thoroughly by being put into practice. But if that is not possible, the next best way is to rehearse it on the interior theatre of the mind. People of great ability as planners are generally people with powerful imagination who are able to see mentally their plans in operation. Imagery bestows upon thought vividness and sense of reality.

Imagery by rendering thought more vivid renders it more accurate. I do not mean to say that imagery is essential to accuracy; for thought-acts of short range indeed we do better without it. This is very noticeable in certain simple experiments involving judgment of weight. The purpose

of these experiments is to ascertain with what accuracy the observer can judge relative weight by lifting successively two objects which are indistinguishable in outward appearance. Now the best results in accuracy are not obtained by lifting the second object very deliberately and trying to compare it with the weight-image of the first object; but by lifting the two objects in quick succession and giving the judgment 'Lighter' or 'Heavier' without hesitation. Here, as so often in more complicated concerns, quick judgment is good judgment and second thoughts confuse the situation.

The gain in accuracy bestowed by imagery is the more marked the wider the range of our plan. For a plan extending over any considerable period of time, every ordinary mind needs the help of imagery. In planning a journey, for example, an exceptional mind will form his scheme rapidly and correctly, and will not trouble to image the details in advance. Ordinary people cannot afford to be so summary; they must plod carefully over a series of mental pictures to make sure that nothing is misrepresented or forgotten. The primary accuracy of the noetic scheme is like that of a powerful thinker planning a system; the secondary accuracy of image-thinking is like the accuracy of a conscientious annotator.

It must be remembered that the sensuous experience, whereby thought obtains this preliminary

and tentative vividness, is generally not all imaginal, but usually in part sensational too; in other words, when we are thinking over a plan we not only picture its result but also talk about it. Talking greatly helps the planner by importing something of the vividness of sensation. Any man, who is not specially secretive or self-contained, cannot help mentioning plans which are uppermost in his mind; sometimes, if he cannot get a friend to listen to him, he will talk to himself.

The function of imagery in thinking is thus connected very closely with that of language; and this appears more plainly if we consider yet another use of imagery, that of making thought more easily controlled. All our images which are distinct are under control, and some are under perfect control; verbal images especially can be summoned, dismissed and modified at will. Now by affixing names to various experiences we can control experiences which are in themselves not easily controllable. Abstract principles and generalizations, attitudes of mind (such as doubt), emotions, sentiments and feelings are in themselves elusive and indefinite, though extremely important, experiences. But men have learnt to give names to them, and by uttering or imaging the names they get control over what the names stand for. Much of the progress of human intelligence consists in giving names to those elusive experiences, and

EXPERIENCE

thus conversing about them or thinking them over in clear terms. With this we might compare the gain which comes to science from translating perceptions of the inexact senses, such as the heat-sense, into perceptions of the exact senses, such as sight.

§ 9. Finally, the use of visual images in the higher kinds of thinking illustrates very clearly the essential difference between noesis and imagery, and at the same time the close relation between them. As visual sensations are the clearest of all and the best for scientific observation, so visual imagery is the best for scientific thinking. It is the practice of clear thinkers to represent their schemes and theories in visual terms so far as possible. So also it is an important point of scientific education to train pupils to use visual terms, and to represent propositions as far as possible by curves, diagrams and other graphic methods; successful lecturers on scientific subjects, like the late Professor Gotch on physiology, do much of their class-teaching with the aid of the magic-lantern. Thus clear and accurate reasoning involves much visualizing. The visualizing is of course somewhat severe in type; luxuriant wealth of imagery would be detrimental to the exact thinker. There is much gain to reasoning in being able to handle readily such visual forms as we see in geometrical figures, map-drawing and architectural design.

This sort of visualizing, valuable as it is, does not constitute the essence of understanding; some eminent thinkers are notoriously wanting in the gift. In one notable example the philosopher, though enjoying a fairly good power of visualizing both shape and colour, makes little use of it in thinking, relying mainly upon verbal images. Moreover he is known by his friends to be extraordinarily deficient in apprehension of spatial relations, and loses his way hopelessly in towns and large buildings even after some acquaintance with them; because he makes no effort to visualize their plan. In such cases fertility and originality of thought are usually far in advance of accuracy of expression and coherence of system.

Formal logic is to some extent a training in visual thinking. The device of Euler, to show the relations between various kinds of premisses and conclusions by means of geometrical circles, though a late extension of the old scholastic logic, was thoroughly in harmony with its spirit. At present Formal Logic is under a cloud; it claimed to teach young people how to think and to be an adequate theory of the processes of thought. These claims have been unmercifully exposed and, in the discredit of the exposure, educators are asking whether the whole study should not be relegated to the limbo of the obsolete. I think that Formal Logic might be rehabilitated, if some one would write a treatise

appreciating its uses and just limitations. It still has a use in showing men how to make thought accurate, consistent and easily communicable from mind to mind.

Excellence in speculative thinking belongs to those who have noetic fertility and width of range, together with a faculty of visualizing and the patience to use it. In poetry a similar gift belonged to Dante, whose stupendous imaginings are told with a precision and sometimes almost a scientific dryness which makes them intensely real. So it might be in philosophy.



## CHAPTER V

### SUBCONSCIOUSNESS

§ 1. The theory of noesis cannot be carried through unless we recognize that much of our soul-life is subconscious. Full consciousness, or focal consciousness as some prefer to call it, is a very narrow affair—a duration lasting some half-dozen seconds, a grasp covering some half-dozen objects. There is no room in that little brightly-lighted ‘specious present’ for the many things which any important act of understanding involves—the deep preliminary need, the constructive effort which the act implies, the various extensive intellectual systems subsidiary to the act, the effects of the act upon the constitution of the soul and upon the future conduct of the understanding.

We must not be deterred from recognizing subconsciousness by some mistaken scruples which are often heard. By dragging subconsciousness into mental science, it is said, you are importing a huge element of confusion and obscurity; all the principles of modern enlightenment are against you. Well, there is some difference of opinion as

to what kind of enlightenment increasing knowledge brings. I greatly doubt the judgment of some who exult so loudly in the triumphs of modern science. They say that the state of modern intellect differs from barbarism as noon-day from twilight; the sun of knowledge has climbed high into the sky; shadows have had notice to quit, and linger now only in out-of-the-way corners. There are other observers who have a different notion of the results of progress. Somewhere in his *Ethical Aspects of Evolution*, Mr William Benett remarks that, though civilized men know vastly more than barbarians, they are in a certain sense vastly more ignorant also; for the growth of ignorance increases with the growth of knowledge. His meaning is that the barbarian cannot be called ignorant of problems which are utterly below his horizon—a mole is not ignorant of astronomy; but in civilization every scientific advance brings within range more problems than it settles, and shows more plainly the limitations of what we definitely know.

I fancy that the reluctance to recognize subconsciousness comes, not so much from the genuine researchers who have a first-hand acquaintance with mental problems, as from those who learn and teach at second-hand, and prefer the sort of science that is neat and small. The researcher is very shy of statements which are quite clear-cut; the second-rate student must have a thing clear-cut,

otherwise he cannot understand it. Thus the textbooks which satisfy him are pitilessly dogmatic and definite; if we took them seriously we should think there was very little left in the world to discover.

The great reward of research is a deepened sense of the vastness and mystery of the world. We are very far indeed from a noon-day illumination and a world bathed in dry light everywhere. Men who refuse to recognize the shadow-side of things suggest the picture of one who has shut himself in a little room, drawn the curtains, lighted an excellent duplex lamp and then announced triumphantly that there is no darkness left in the world. To me the real men of science suggest a very different picture: they are like a group of explorers in a mammoth cave; a large circle indeed is lighted up by the torches, but the light is by no means clear and steady; overhead, faintly seen, are glimpses of a distant roof, and on every side there run away dim galleries with weird stalactites and every suggestion of the vast and intricate unknown.

Without the recognition of subconsciousness our conception of logic must be too narrow to be of much service in explaining how men actually think. The old official logic is immeasurably smaller than the thing it professes to explain. But in recent years there have grown up the beginnings of a logic based on psychological observation. Much good logical doctrine lies scattered through

the writings of our leading contemporary psychologists, such as Professor James Ward, Mr William McDougall and, above all, in the *Analytic Psychology* of Professor Stout. They all recognize that the theory of understanding is a much bigger, more complicated and subtler business than the logicians of the past assumed. But even their logical outlook fails in recognition of the mysterious but vitally important kind of intellectual process which goes on below the level of full consciousness. The position of these thinkers to the subconscious is somewhat anomalous. All admit that subconsciousness really exists—Professor Ward, indeed, puts forward an elaborate argument in support of it; but none of them makes any effective use of it in his general account of the human mind. The older school of psychologists, of whom Professor Sully may be reckoned the last, ignored the possibility of subconsciousness and consequently formed their scheme without it. Contemporary psychologists recognize subconsciousness, but adhere in the main to the old scheme.

§ 2. The first questions to be faced stand at the threshold of the whole business: Does subconsciousness exist, and how are you going to prove it? We might appeal to popular thinking, which has fully recognized the reality of subconscious passion. ‘Latent desire,’ ‘unconscious bias or prejudice,’ ‘self-deception’ and many other phrases

imply that a man may desire or shun, love or hate, value or depreciate certain objects without being fully conscious of it. The phrases about subconscious understanding are also significant, though less explicit. A man will say "I *felt* I was doing wrong," meaning some moral consciousness less clear than knowledge. Another favourite phrase is 'instinct.' 'Instinct told me I ought to pay an early call.' A similar word is 'intuition'; another is 'inspiration.'

But arguments from common usage will not suffice for the systematic logician. Before he will consent to remodel his study and admit the subconscious, he must be convinced that the subconscious exists by indisputable scientific evidence. Fortunately we can satisfy him; such evidence is available from the records of hypnotism. The advantage of hypnotic methods is that in hypnosis the focal consciousness goes into abeyance, and the experimenter can explore the subconsciousness of the subject. Among those who have denied the possibility of subconsciousness the usual explanation of facts which indicate the operation of subconsciousness is 'unconscious cerebration,' or some such physiological phrase. But these hypnotic experiments show that the work which is done without focal consciousness is essentially of the same kind as the work done with focal consciousness. If subconsciousness is purely physiological, then all consciousness is purely physiological. I

will now quote the records of two experiments which prove that subconscious understanding exists and that it can do the work which ordinary focal consciousness performs, and perhaps something more.

The first experiment is from Dr Wingfield's *Introduction to Hypnotism* (p. 17). He says:

"During the May week of 1886 I hypnotised G., an undergraduate, one evening, and told him that he would bring me a poem of three stanzas on the May races, on the following evening at 9 o'clock. On awaking he did not recollect the suggestion, or any of the occurrences of his sleep. Next day he came to luncheon with me. I hypnotized him again, and he fell at once into a deep somnambulism. I now asked him what I had told him to do, and he answered that he was to write a poem and bring it to me at 9 o'clock that evening. I asked whether he had composed any of it, and he said he had made the first verse. This, he said, was as follows:

O, Trinity, Pembroke, John's, Caius,  
Soon, soon in your shoes shall you shiver ;  
You may swagger as much as you please,  
But the Hall will be head of the river.

Not very brilliant poetry, perhaps! However, on awaking he knew nothing of what had been said, but at 9 o'clock he brought me the whole poem of three verses, the first being that given above. He told me that at half-past eight he had suddenly been seized with the idea that he would write a few verses on the May races, and sat down to do so. He said he had written them straight out as they came into his head, seemed rather pleased with his performance, and was evidently disappointed when I told him I did not think much of them.

Here we have the verses composed in obedience to a suggestion addressed to the secondary consciousness and without the knowledge of the waking consciousness. The last two verses, at any rate, and possibly the first, were

composed during hours of wakefulness, and yet unconsciously in the ordinary acceptation of the term. The secondary consciousness, then, appears to be capable of intellectual activity, and this activity may occur while the person concerned is wide awake, though, of course, quite unaware of these processes.

I have given the above experiments out of many hundreds, because they are in themselves so simple and so easily carried out. The reader will not find it difficult to make successful experiments on similar lines."

The second case, which is one of 'deferred suggestion,' is to be found in a paper by Dr T. W. Mitchell entitled "The Appreciation of Time by Somnambules" and published in the *Proceedings of the Society for Psychical Research* (part LIV, vol. XXI). Dr Mitchell hypnotized a woman, and when she had passed into a deep somnambulism ordered that she should when many minutes had elapsed, say 2000 or 200,000, do some definite action, say make a cross with a pencil on a piece of paper. Of a great number of such experiments most were successful; wherever the subject happened to be, and whether awake or asleep, she made the mark without any fully conscious motive. There are two possible explanations of the way in which the subject was enabled to carry out these suggestions: one that she, though a woman of small mathematical ability, calculated some time after receiving the suggestion at what date it fell due to be performed; the other that she made no computation, but counted each minute as it passed

till the full time had elapsed. Dr Mitchell adopts the former; though it is unquestionable that somnambules have extraordinary powers of measuring the lapse of time, which can be explained only by time-watching. However, for the present purpose it is not necessary to decide between the explanations; because it is certain that the subject had no full consciousness, either of calculating the date, or of counting the minutes as they passed. If she used calculations she probably did them, being a slow reckoner, in her sleep. As the cross was in some cases written on the paper during the subject's sleeping-time (for example at midnight or 3 a.m.) she must have used the method of time-watching also, going to bed knowing subconsciously the hour at which the cross was to be written and counting the minutes subconsciously during sleep till the appointed time arrived. I need hardly point out that this time-watching faculty is far beyond the power of ordinary focal consciousness. A person who lay awake in his bed till 3 a.m. could neither count the minutes accurately, nor endure the strain which counting would put upon his attention.

§ 3. I mention these supernormal powers of subconscientness, not in order to open a floodgate of superstition and to argue that subconscientness can do miracles, but because the doctrine that soul acts upon body, which is indispensable to my view of logic, demands powers which are utterly



beyond focal consciousness, together with incessant psychical activity. Consider what is implied by the simplest action of soul upon body. When we voluntarily move our hand, all that physiology can tell is that the hand moves because an impulse has gone down the motor nerve from a certain area in the cerebral cortex. But if the soul has caused the movement, it must have stimulated the proper cortical area to the proper degree. So too with image-thinking; when we want to think over a matter and summon the appropriate images for that purpose, the soul must know where to go and what cells to excite, and how much to excite them. And this power of acting on the body and of knowing what to do to make action effective is not confined to waking life. Locke, fortifying himself with common-sense, poured much contempt upon the opinion "that the soul always thinks, and that it has the actual perception of ideas in itself, constantly, as long as it exists; and that actual thinking is as inseparable from the soul, as actual extension is from the body." But do not these facts of hypnotism incline us to believe that Descartes after all was right; and that Locke, for all his common-sense, was wrong?

The subconscious power which interactionism requires is not more wonderful than that which is required by certain theories which are held by accredited scientific men, for example, the theory

of Vitalism, of which Mr J. S. Haldane is the most famous advocate in this country. According to Mr Haldane the functions of the body must be controlled by some influence which we call 'vital' because it is more than mechanism. The elaborate system of adjustments and compensations which are needed to keep the body in healthy working order has never been explained mechanically; and, the further physiology advances, the less chance there seems to be of any mechanical explanation. If the facts alleged by Mr Haldane are physiologically sound, it is no longer incredible that the soul should know enough about the body to regulate the intake of air into the lungs or the formation of the various liquid secretions.

The same considerations apply to the facts of Regeneration, that strange power by which the lower forms of life are enabled to replace lost members. The best authorities see no possibility of explaining this mechanically. Thus we must suppose that the crab, for example, has a soul; that the crab-soul knows what the crab-body ought to be and, when a leg has been lost, sets to work to replace it. So also with Heredity. The facts adduced by Mr Haldane amount to this, that there is an effort on the part of every race-type to preserve the type against forces which tend to transform it. In the individual this means that the soul knows what the race-type is, and maintains the body in

conformity therewith. What sort of knowledge this is, or how it is acquired, we cannot imagine; but for strangeness it may easily be paralleled from the records of hypnotism.

§ 4. Up to the present psychologists have not succeeded in framing any satisfactory theory of subconsciousness which does justice to the many aspects of the problem. For present purposes, however, it is enough to say that the practical difference between focal consciousness and subconsciousness is a difference of attention. When from any cause we attend closely to any mental content, that mental content stands above the general level and comes into focal consciousness; what is in consciousness and yet not attended to belongs to subconsciousness. Thus we can draw no sharp line of demarcation between the two fields; there are many degrees of attention and of inattention.

Attention may be compared to the focus of acute vision; it is that condition of mind in which mental power is at the maximum of efficiency. Now there is evidently no need for mind to be at the maximum over its whole area. In man attention is directed only to those tasks which cannot be worked save at full pressure, so to speak. The distribution of attention in the lower levels of life may be very different from ours. When an amœba digests a morsel it may need all the attention that it can command.

It has been argued with reason that attention is correlated with relatively high stimulation of a part of the brain. Let us imagine that the whole cerebral cortex is in a state of faint equable stimulation; this will correspond to dreamless sleep. In our waking time something is always being attended to, and the area of the cortex corresponding to the attended-to mental content is in higher stimulation than the parts adjacent to it. Mr Rutgers Marshall, who has developed this view in his work on *Consciousness*, has put some useful phrases into currency. The total condition of the mind at any moment, or psychosis, he calls the noetic pattern; the corresponding brain-state he calls the neururgic pattern: emphatic portions of the neururgic pattern correspond to psychic emphases in the noetic pattern. The degree of nervous stimulation must, of course, be relative; when the brain is comparatively quiescent, a stimulation of one area, which under other circumstances would be unnoticed, may attract keen attention. These views, which I borrow from Mr Marshall, do not commit me to his doctrine that every element of a noetic pattern is correlated with an element of a neururgic pattern. On the present evidence I could not go further than saying that the correlation holds in regard to the sensational elements of consciousness. Some elements of consciousness are not sensational and may

not have any neururgic correlates at all. All the same, Mr Marshall's conception is useful as helping us diagrammatically to apprehend the truth that attention involves the relative intensification of some element of a total psychic state.

§ 5. If the soul is of great extent and the focus of attention of small extent, it follows that the subconscious is by far the larger part of the soul. Let me quote an eloquent passage from Professor Gilbert Murray<sup>1</sup>:

"Conscious and professed ideals are as straws in the wind; the unconscious or concealed ideals are the real forces that govern mankind. Some philosopher has compared the unconscious part of human character to the submerged part of an iceberg at sea. The great bulk of the iceberg is under water, invisible and unnoticeable: what we call the iceberg is only the cluster of towers and pinnacles that reach up into the light. The great bulk of human character lies below the water-line of consciousness. We breathe, digest, preserve our balance without thinking about it: we seek what we like and shun what we dislike without thinking of it: we devise the ways of getting or of shunning, we plot, scheme, flatter, slander, bribe or threaten—without thinking of it, without knowing of it, without reason or conscience having a hearing on the subject. The awakened reasonable conscious Man is the topmost tower of the whole great structure. But it is the instinctive and unconscious Man that supplies both the mass and the momentum. It is this submerged self, this self, which, to use the medieval phrase, 'slumbers beneath the threshold,' that counts for most in the movements of masses and of nations."

Let us leave aside the breathing, digesting and balance-preserving elements of subconsciousness

<sup>1</sup> *International Journal of Ethics*, Oct. 1900.

and speak only of what concerns understanding. The most important elements of consciousness, not only for understanding but for every part of our life, are the desires and sentiments, especially those that are based upon the primary instincts of our animal nature. Here again we may refer to Professor Murray:

“The unconscious ideals are what guide mankind. And among the unconscious ideals there is one especially which is vast and permanent: the very centre of the Ego is stirred by it: the ideal of the man’s own prosperity, success, expansion. ‘I love the things that make me great and rich and admired. I hate the things that pull me down and make me small and of no account’.”

Conjoined with this self-interest, sometimes reinforcing it, sometimes opposed to it, are the sentiments which belong to family, home, country and the various institutions of which we are members. Now it is impossible to contend that we have these sentiments only when we are fully conscious of them; they are always there, just below the surface, ready to start into activity at the appropriate moment. A minor illustration of the fact that sleep itself makes no difference to them is given by the experience of the nursing mother, who sleeps through ordinary noises but starts up at the lightest cry of the child with which her interest is so powerfully engaged<sup>1</sup>.

<sup>1</sup> This familiar fact was tested by Professor Baldwin, who accustomed himself to sleep with a child, and soon found that his power of waking at the child’s cry could not be explained in any mechanical way.

Some interesting illustrations of the importance of the passional element of subconsciousness are afforded by recent researches into psychic pathology. The case which I am going to quote is one which exemplifies what may be called passional memory. It shows that desires which have been repressed or cruelly disappointed do not totally disappear, but have a continued existence in subconsciousness, manifesting their existence by extraordinary and often extremely distressing perturbations of fully conscious life. The case, which was related to me by an eminent English physician from his own practice, is as follows: A young lady was brought to him suffering from persistent pain in her right arm. Examination of the part showed no morbid condition; and it was soon apparent that the trouble was of a hysterical nature. On going into the history of the case he elicited the following facts. Several months previously the patient was engaged to be married to a man to whom she was greatly attached. One morning she was in her house, mending some broken netting in an aviary and reaching up above her head in a way which caused discomfort in her right arm. While she was thus employed her mother brought in a telegram announcing that her betrothed had jilted her and become engaged to another woman. The shock was severe: the faithless lover and the broken engagement were

SUBCONSCIOUSNESS

never mentioned in the household again; but thenceforward the lady suffered from pain in the right arm. This is what psycho-pathologists call a 'trauma'; a wound or injury inflicted upon consciousness, and persisting it may be long after the sufferer has forgotten the incident which caused it. The remedy in such cases is, after the cause of the trauma has been discovered (often a task of great difficulty and delicacy), to get the patient to talk it over and relieve his mind of its secret burden. This in technical phrase is called abreaction, and has an effect similar to that of opening up an unhealthy wound in the body. The mental injury begins to heal and the morbid symptoms disappear; in fact, the curative effect is similar to that produced by confession in the Catholic religion. Such a case suggests a host of interesting questions; but all that I wish to point out just now is its bearing on my contention that subconsciousness is the source and seat of passion. It is well known to practitioners of this sort of mental medicine that secret desires, which exist unknown to the patient's full consciousness, are important determinants of conduct. These desires can be traced by psycho-analysis, which consists partly in comparing the time-reactions of the patient's verbal associations, partly in skilfully framed questions, by studying the patient's dreams, and also by hypnotism. The same means can be used to discover the obscure



cause of a trauma, that is, to revive a repressed or forgotten memory. Such memories, then, must have a continuous existence as modifications of the subconsciousness.

§ 6. The greater part of our understanding is subconscious, both in invention and in retention; that is, we form new syntheses by efforts and according to methods of which we are not fully conscious, and in the same way retain our syntheses previously acquired. The retention-aspect of understanding is often spoken of as knowledge, and knowledge, as we have seen already, is a matter of noetic system. Take as an example knowledge of a language. Spoken language consists of a number of arrangements of vocal sounds corresponding to various needs, perceptions, sentiments and so forth; knowing a language consists in an effective grasp upon these various arrangements.

The most interesting kind of intellectual process I take to be deliberate personal invention, the effort of an individual to form an effective scheme for some purpose which interests him. This will be discussed at length presently, for the purpose of showing how subconsciousness works in a concrete case. But brief mention may be made here of the kind of invention which is not deliberate nor personal. Such is the invention of language. Language, of course, is not invented by grammarians: the grammarian invents nothing; he

merely codifies. Orderly speech came long before grammar. A well-developed, though unsophisticated, language is a great monument of subconscious invention. The old Greek linguistic system, which was so immensely complicated and subtle, was invented thus, and thus also it was used. When the ancient Greek spoke, he knew well enough what he was saying, but was not conscious of the detailed correspondence of his words with the thought which he meant to express.

The retentive aspect of subconsciousness may also be treated somewhat briefly, in view of what has been said already on the relation of noesis to memory. If memory is a noetic affair then it must be mainly subconscious. Here I have against me, as I am well aware, so eminent an authority as Mr William McDougall, who distinguishes two sorts of retention, one physical, the other psychical; and appears to regard the former as more important. The authority of Professor Stout can hardly be invoked on my side as definitely as I could wish. However, though he says very little about subconsciousness explicitly, he has made much use of the phrase 'psychical dispositions.' Now a 'psychical disposition,' surely, implies a psyche. A psychical disposition is a kind of memory; and thus it would seem that Professor Stout must to some extent favour the view that memory consists in a certain enrichment or modification of the

psyche from the experience through which it has passed, an enrichment of which the agent for the most time is not fully conscious.

Subconscious intellectual retention may be illustrated further from our experience of meaning. We may say that anything has meaning which appeals to some interest in such a way that we know how to behave in reference to it; for example, a pen has meaning to a writer. Now the full meaning of anything is very seldom all in consciousness at once. The writer picks up his pen, and may not be conscious of more than its visual appearance; all that wealth of noetic systems which pen-using implies is probably below the surface. And yet his attitude towards the pen is very different from his attitude towards some instrument of unknown function; he feels 'at home' with it, as we say. But this feeling of at-homeness is due to something in subconsciousness. There are, as I have said, degrees of subconsciousness: some of it is far below the surface, or far away from the focus of attention; some of it is very near. And when it is near, it affects the content of full consciousness with what, in the case of the pen-user, I have called the sense of at-homeness.

§ 7. There is no reason to doubt that we experience sensations and images subconsciously. As examples of subconscious sensational experience one might instance the working of important

viscera, such as the liver and the organs of assimilation. The working of the liver affords no sensation at all which appears in full consciousness, but everyone knows that its prosperous or unprosperous working makes the greatest possible difference to one's general feeling-tone. Now pleasure and unpleasure are, respectively, the sense of satisfaction and the sense of dissatisfaction which any experience gives us. If the unprosperous working of the liver is unpleasant, the working must be experienced in some way or other; and this experience must involve subconscious sensation. The argument is the same if we regard the sensation of the working of the liver as experienced, not by itself, but as contributing to what is known in psychological technology as the coenesthesia, that is, the various important organic sensations fused into a massive whole. For, if the working of the liver is felt as part of a complex, it must be felt somehow also in separation. The coenesthesia consists of sensations, which are subconscious for the most part severally, but can be cognized by full consciousness when combined. These are undoubtedly the most important examples of subconscious sensation. But almost every sensation that is experienced consciously can be experienced subconsciously, if for any cause it falls out of the focus of attention. A simple example is the sensation caused by the contact of clothing. That such sensation is still

felt even when not attended to is proved by the sense of comfort or discomfort thence arising, which gives a tone to general consciousness.

If sensations can be experienced subconsciously, there can be no valid reason for doubting that images also may be experienced subconsciously; in fact a central stimulation of the cortex, being fainter, might be expected to evade attention more easily than a peripheral stimulation. At present it may not seem obvious what function the subconscious image could perform; but this will appear shortly.

We need hardly elaborate a proof that pleasure and unpleasure can be experienced subconsciously. That unpleasure, for example, as a condition of the totality of consciousness, can be felt subconsciously would seem to be proved by the facts of dreaming. Unpleasant dreams are often suggested not only by local discomforts, as when a pain in the leg suggests amputation; but also by general discomfort, as when the oppression of an ill-ventilated eider-down quilt suggests a nightmare of bankruptcy or of failure to understand the New Realism. But feeling-tone belongs not only to the totality of consciousness, but also to its component parts. The worry of a lawsuit or of a strained leg, for example, is decidedly unpleasant; and, even when we are not thinking of it, the unpleasure may persist subconsciously, contributing a sombre element to the totality of consciousness.

§ 8. I wish now to show the bearing of these general remarks by explaining in detail how subconsciousness has a part in the most important kind of understanding, Invention. It is hardly necessary to prefix the warning that no one can explain invention in such a way that we can see the methods of the inventor fully revealed, or that any un-inventive person will thereby be enabled to invent. There are two opposite fallacies to avoid, one that we can know everything about invention; the other, that we can know nothing. The feeblest position of all is to fall back upon such terms as 'genius' and 'inspiration,' and to treat them as substitutes for explanation. Inventions must be made by some method or other; and it is the duty of the logician to explore the method. But it may be a characteristic of the method that it cannot be articulately expressed, and cannot therefore be taught by articulate instruction.

The classical passage for the importance of the subconscious in one branch of invention, that of literature, is Louis Stevenson's "Chapter on Dreams." There he describes a certain imaginative boy (himself) who had the custom of setting himself to sleep with tales. These tales in his young days were irresponsible inventions with no purpose or intelligible sequence in their incidents; "so that the little people who manage man's internal theatre had not as yet received a very rigorous

training, and played upon their stage like children." Later in life the youth became a professional story-writer.

"Here was he, and here were the little people who did that part of his business, in quite new conditions. . . . The pleasure had now become a business; and that not only for the dreamer, but for the little people of his theatre. They understood the change as well as he. . . . This dreamer (like many other persons) has encountered some trifling vicissitudes of fortune. When the bank begins to send letters and the butcher to linger at the back gate, he sets to belabouring his brains after a story, for that is his readiest money-winner; and, behold! at once the little people begin to bestir themselves in the same quest, and labour all night long, and all night long set before him truncheons of tales upon their lighted theatre. No fear of his being frightened now. . . . Applause, growing applause, growing interest, growing exultation in his own cleverness (for he takes all the credit), and at last a jubilant leap to wakefulness, with the cry 'I have it, that 'll do!' upon his lips: with such and similar nocturnal emotions he sits at these nocturnal dramas. . . . Often enough the waking is a disappointment. . . . and the play, to the awakened mind, is seen to be a tissue of absurdities. And yet how often have these sleepless Brownies done him honest service, and given him, as he sat idly taking his pleasure in the boxes, better tales than he could fashion for himself."

Then he relates a long and complicated fiction which came to him in this nocturnal way. And thus continues:

"Who are the Little People? They are near connections of the dreamer's, beyond doubt; they share in his financial worries and have an eye to the bank-book; they share plainly in his training; they have plainly learned like him

to build the scheme of a considerate story and to arrange emotion in progressive order; only I think they have more talent; and one thing is beyond all doubt, they can tell him a story piece by piece, like a serial, and keep him all the while in ignorance of where they aim. Who are they, then? And who is the dreamer? Well, as regards the dreamer, I can answer that, for he is no less a person than myself. . . . And for the Little People, what shall I say they are but just my Brownies, God bless them! who do one half my work for me when I am half asleep, and in all human likelihood, do the rest for me as well, when I am wide awake and fondly suppose I do it for myself. That part which is done while I am sleeping is the Brownies' part beyond contention; but that which is done when I am up and about is by no means necessarily mine, since all goes to show the Brownies have a hand in it even then. Here is a doubt that much concerns my conscience. For myself, what I call I, my conscious ego. . . the man with the conscience and the variable bank-account. . . I am sometimes tempted to suppose he is no story-teller at all, but a creature as matter of fact as any cheesemonger or any cheese, and a realist bemired up to the ears in actuality; so that, by that account, the whole of my published fiction should be the single-handed product of some Brownie, some Familiar, some unseen collaborator, whom I keep locked in a back garret while I get all the praise and he but a share (which I cannot prevent him getting) of the pudding. I am an excellent adviser, something like Molière's servant; I pull back and I cut down; and I dress the whole in the best words and sentences that I can find and make; I hold the pen too; and I do the sitting at the table, which is about the worst of it; and when all is done, I make up the manuscript and pay for the registration; so that, on the whole, I have some claim to share, though not so largely as I do, in the profits of our common enterprise."

Stevenson's night-experiences, I suppose, were unusual; and most authors do more of their



literary dreaming awake than asleep. But making this allowance I should say that Stevenson shows his usual philosophic insight, and has given a substantially accurate account of the process of composition. The only qualification to be made is that the subconscious process is interrupted by any diversion which engages the whole strength of the mind. A superficial diversion of attention, on the other hand, is rather beneficial to thought. And herein lies the explanation of most of the apparent idleness of literary and artistic men. They spend much time in loafing and doing trifling things, but refuse to engage themselves heartily in any alien pursuit. During such intervals of slackness the Brownies go on working.

It will, however, simplify matters if we start, not with this high intellectual sort of invention, but with an example of the inventions or discoveries of practical life. Take the nursery poem about King Bruce of Scotland. The King, we are told, had "flung himself down in a lonely mood to think....For he had been trying to do a great deed to make his people glad; he had tried and tried and couldn't succeed, and so he became quite sad"; and after long pondering said he'd give it all up; and was subsequently heartened to fresh effort by watching a persevering spider; and was eventually successful. This is a sequence with which we are familiar in ordinary life; urgent

desire, long anxious brooding, encounter with some suggestive accident, sudden invention of a suitable plan, and joy of the agent in the successful outcome of his mental striving. The parts of the series which I wish to consider in the two following sections are, first the initial desire, secondly the brooding.

§ 9. The desire of King Bruce to think of a plan whereby to deliver his fellow-countrymen was a fully conscious desire; but all desire which eventuates in the formation of a plan need not be fully conscious. It may be far below the surface, appearing only in dreams, when all sorts of obscure impulses manifest themselves which the fully conscious personality represses with its censure. In full consciousness it may only manifest itself as a general querulousness and discontent; or, at the most, as a dissatisfaction with existing conditions. Every student of human nature is aware that ill-temper is often due to the secret gnawing of baffled desire. We often hear of men surprising their friends and even themselves by striking out suddenly into new courses both for good and for evil. The surprise would not be so great if the friends could dive into the agent's subconsciousness.

All this class of facts has been helped to recognition in modern times by the study of the psychology of religious conversion. A man may go on in his wild courses apparently without remorse

or check, but with a secret growing distaste; and then almost in a moment, perhaps at the call of some potent personality, break off entirely from his past. The example of Bruce would have been more apt for our present purpose if he had been fighting on the English side, and then with a sudden revulsion had resolved to devote himself to his own country.

§ 10. Let us pass now to the part of the story where Bruce is pondering over the situation to think of a plan—‘brooding’ as we may say for short. Brooding is the obscurest part of the whole business, but to my mind the most interesting.

I believe that wherever there is desire there is also consciousness, however vague, of a way of satisfying it. As a matter of introspection, I cannot imagine the existence of a desire with absolutely no idea of satisfaction. The satisfaction may be impossible, as the resurrection of a dead friend; but we must at least be able to imagine it accomplished. This illustrates the fundamental inseparability of the two sides of the soul, the passionate and the intellectual. Brooding is an attempt to elaborate a vague ill-defined rudimentary scheme, so vague that the agent is quite incapable of expressing it.

It is a narrow, hard-souled fallacy encouraged by the mechanical pedantries of chop-logic that would deny the existence of any thoughts but such

as can be formulated in clear-cut terms. Not all our fully conscious wants can be articulated, much less the subconscious. A man can say definitely 'I want to go to the South Pole'; but, if he wants to plunge into an adventure which is generally analogous to a polar expedition, he will be able to say nothing definite beyond that he wants some sort of exciting experience which is different from various experiences which we might put before him. A certain friend once had the task of suggesting a trade to a lame boy who was starting in life; and it was remarkable what a number of trades had to be suggested before the right one was found: the boy did *not* want to be a tailor, or a bookbinder, or a printer, or any one of many other indoor occupations; and it was some time before any one thought of the right trade, that of photographic retoucher. A similar experience is frequent in love-affairs. A lady has a general idea of the sort of husband she would like. Jones, Brown and Robinson present themselves successively and are rejected. We must not blame her if she cannot say definitely what sort of man she does want. No doubt she really has an ideal, though it is incapable of expression.

Let us return to Robert Bruce. We may take it for granted that from the very moment he conceived the desire of expelling the English from Scotland he had some notion of the way it might

be accomplished. According to the poem this inchoate plan could not be brought into practicable form. What then was going on in his mind in this period of unsuccessful brooding? A superficial student might be tempted to say that nothing at all was going on, and that his mind was at a dead standstill, since no result was achieved. This I think to be a mistake. Introspection shows that even unsuccessful brooding accomplishes something. After such a period we feel that we have progressed towards a result, at the least by clearing away impossible alternatives. What often happens is that after a long spell of unsuccessful brooding we go away to relaxation and, coming back refreshed, easily think of something that will serve as a practicable scheme. Thus the time of apparent standstill was really full of subconscious activity.

It will be worth our while to consider a little further this period of brooding. If advance is made by it, the work must be both positive and negative; positive in the elaboration of the initial plan, negative in the exclusion of unsuitable suggestions. The positive work is intelligible enough in the light of what has been said before. There are infinite degrees of vagueness; and a plan may be greatly elaborated from the original nebulosity, without being either practicable or expressible in fully conscious terms. The negative work is more subtle and needs further explanation.

SUBCONSCIOUSNESS

The exclusion of unsuitable suggestions may be regarded as due, either to the positive quality of the inchoate plan, or to a grasp by the thinker on the conditions of reality. Bruce would not have entertained a suggestion to call in help from France; vague as his plan was, it was inconsistent with such a step: nor would it have entered his head to try to expel the English with a hundred men; the known conditions of reality made that impossible.

§ 11. Let me supplement these remarks on subconscious invention by considering facts connected with advising and planning. Bruce was at a standstill because he could not think of a plan. He might have resorted to a counsellor.

One obvious mistake for the logician to avoid is that of relying upon vague non-committal words such as 'ability,' and saying that men can give good counsel because they have ability. There are many men of undoubted ability who are very poor counsellors. In earlier days it was the writer's fortune to hold a post in a great public institution where, though most of the work was mere routine, points of difficulty arose daily which called for fine judgment and were often such that advice was needed from senior colleagues. It was soon apparent that the seniors differed enormously in advisory power. Some were frankly incompetent and could only just manage to shuffle through the routine duties. But others were incompetent in

a way that was most surprising. They were men of real distinction, widely known in scholarship and literature, and had enjoyed years of departmental experience; and yet were quite useless as departmental advisers. On the other hand there were men of no greater apparent advantages whose advice was valuable in the highest degree—‘Miller is always right.’ Every great institution owes much of its efficiency to possessing one of these Ahithophels from whom the counsel-seeker never turns away disappointed. We should have solved the deepest problems of logic if we could penetrate fully the secret of their power.

The first condition of advisory power is evidently interest. Those officials, who though not wanting in capacity had no advice to give, were not really interested in their work; while the good advisers were. Such interest is not of a transitory kind which comes and goes; but is a permanent possession, and is real and truly operative even when its possessor is asleep.

The good counsellor must have a firm grasp upon the conditions of reality. This means that he apprehends clearly and continually has in mind the noetic systems which underlie the main facts about which he gives advice. In a government department the good adviser must grasp firmly the purposes for which the department exists, and the main principles of the work by which those purposes

are achieved. Without this grasp upon the real, fertility is useless or worse than useless. Some would-be counsellors are actually obstructive by the plenty of their futile suggestions.

Then the mind of the counsellor must be stored with schemes on which he can draw at need. This is the fruit of experience. Merely to have gone through events does not give experience of any value; the agent's mind must have reacted to the stimulus of events and enriched itself thereby.

There must be firm and quick-working associations between the schemes in store and the components of those schemes; so that, when a component occurs, the right scheme may be suggested at once. All good counsellors are quick to see analogies; and this sort of association is, as explained above, the basis of analogical reasoning.

But the essential quality of good counselling, as of inventive functions generally, is something more than all that; it is the faculty of originating schemes. This is the primal and unteachable element in mental ability. I do not offer to explain it; with our present knowledge it is not explainable, and perhaps it never will be. The metaphysician might make some guess about it, but for the logician it is ultimate; it is indeed the primary datum of logical theory. The other subsidiary qualities of the good counsellor, interest, grasp on reality, experience, power of analogy are dependent upon



subconsciousness; but still more so is mental creation. Who by taking away any amount of thought can add the smallest fraction of a cubit to his originative power?

Besides being able to originate schemes, the good counsellor should be able to criticize the schemes of others. The two abilities are not always conjoined: some men who originate nothing are nevertheless useful critics; this indeed is the special character of the intelligent conservative. The testing process may consist either in comparing the suggested scheme with the known conditions of reality (this is typical conservative criticism); or in comparing the parts of the scheme with each other, to insure consistency. In either case the bulk of the work is done subconsciously. The counsellor hears the scheme propounded, then shakes his head and says, 'That won't do.' He *feels* it won't do; the grounds of his dissatisfaction do not become fully conscious till he states them articulately. What fully-conscious criticism is like may be known by considering how we are wont to elaborate the details of a scheme. Consider a simple example, that of a man who wishes to travel to London to meet an old friend at the National Liberal Club and to do certain business. In such a case a careful planner will go through the whole day in imagination, will picture himself going to the station and his old friend making his way to

the Club, and so on. If the whole imaginary process goes through his mind smoothly and without hitch, he feels satisfied and has the sense of knowing definitely what he is going to do. But if he comes to a hitch, *e.g.* to a difficulty about the way in which the old friend (who is lame) is to get to the meeting-place, he pauses in his imaginings and casts round for a supplementary plan whereby the difficulty may be overcome.

A point which may be raised is whether the subconscious testing of schemes is altogether noetic, *i.e.* by apprehension of the form of the object, or whether it may involve a subconscious use of images. In a previous section I have given reasons for thinking that subconscious images are possible; and I think that we use them in testing schemes, because it is hard to see how the work can be done without them. Let us suppose the scheme just instanced to be proposed to the counsellor; we can imagine him saying after a very brief pause for thought, 'Oh, but Jones is lame; he could never get down to the Club in time to meet you.' Thus he tests and rejects the scheme. Does he do it subconscious-noetically or subconscious-imaginally? I think the latter. The suggestion offered is not one which conflicts absolutely with the patent conditions of reality. If, on the other hand, the suggestion were made that Jones should proceed by a flying-machine to the place of meeting, we

should not take the trouble to consider the matter, but simply laugh at the impossibility; the scheme of reality ready formed in the agent's mind repels the suggestion at once. But, if a plan is proposed which needs detailed reflection to see that it is impracticable, how do we discover the impracticability? It seems to me most probable that very rapidly and subconsciously we form an imaginal representation of Jones, for example, walking rather briskly to the Club and see that it is inconsistent with what we know of him. In short, we use subconscious images whenever there is any reasonable doubt as to the feasibility of the plan. We shall see more of this question presently in relation to literary composition.

§ 12. There is no reason to doubt that the emotional and hedonic accompaniments of success or failure in invention are experienced in part at least subconsciously. Every one who has spent much of his force upon intellectual work knows how keen is the pleasure of discovery. There is a familiar story about Newton who, when he was on the verge of completing the calculations showing that the motions of the moon are analogous to the known laws of falling terrestrial bodies, was overcome by mental agitation, and had to ask a friend to finish the problem for him. On the other hand most of us know the dull discomfort and general depression, often assigned to alien causes, due to

baffled intellectual effort. Now the emotional agitation and the pleasure and pain which are felt and recognized as such in full consciousness are only the manifestations above the surface of a much greater bulk of emotional and hedonic experience proceeding down below. In all thinking, whether successful or unsuccessful, there is an immense amount of subconscious activity going on; images, noetic schemes, acts of comparison and experiment incessantly proceeding in that busy subterranean workshop. And there is no reason to doubt that every one of these subconscious mental acts, like every human act, has its own pleasure or pain, though it is only the feeling-tone resultant of a multitude of such acts that appears above the surface. When any effort is notably successful, as in the case of Newton's discovery, there is an uprush of pleasure which floods the whole of consciousness; showing how strong are the forces which usually work unseen.

§ 13. The principles set forth in the preceding sections are to be traced no less clearly in such higher walks of mental activity as literary composition: though the commonplace examples given above are better for exposition; since everybody knows about them, while few know much about composing. The literary man knows how indefinable are the impulses which make him turn to some one kind of writing rather than another;

and how within a certain limited field, such as philosophy, one time seems appropriate for a book of criticism, another time for a book on logic and so on. And in the act of composition every writer knows how dependent he is upon mental conditions which are utterly beyond his fully conscious knowledge and control. Let us suppose that he has got his subject in a general way; that it has been given to him more or less from without, as by being asked to write a paper, say, for an Ethical Society: and suppose that he has got his topic in a narrower sense—on Truth-hunting, for example. How is he going to conjure up the ideas which are to form the body of his essay? What he does is to bend his mind upon the subject, and then ideas come more or less rapidly. But, if they hang back, he cannot by any device compel them.

The dependence of the literary man upon the subconscious may be illustrated from what is termed 'getting stuck' in composition. Every writer has the experience of reaching a point in his work where the interest seems to go out of it, and of feeling loth to proceed; though he cannot say what is amiss with the work or with himself. At such a pass the experienced writer lays his work aside and takes an interval for meditation. He generally finds that he has been working in the wrong way, is able to recover his course and goes forward with new vigour. What is the logical

explanation of this? The only one I can see is to suppose that subconsciously he had discerned that the scheme of the faulty section was inconsistent with the scheme of the whole; and that, as his zeal depends on the carrying out of the total scheme, this was why he flagged. The worst course a man can take is to do violence to his humour and by a desperate self-exhortation force himself to persevere. He ought to treat his listlessness as a danger signal; if he neglects it, his work may be a mass of inconsistencies. We have a similar experience in reading books; a piece of inconsistent characterization, a scene which clashes with our knowledge of what is possible, breaks the spell and makes us lay the book aside with a yawn without knowing why. Elder people have this experience much more than younger, because their knowledge of life enables them to detect a false note more easily. This critical faculty is not confined to people who can give a reasoned account of it; a reasoned account is a good thing in its way, but it is not the root of the matter. Still less is formal logic any good. No book can either be judged or be written to any purpose by reliance on formal canons of consistency.

But it is perhaps in the apt choice of language that the writer's dependence on the deep powers shows most plainly. Suppose that he has got his section-headings comfortably blocked out and that he is sitting pen in hand ready to put words on

paper—how is he going to make the right words come? The syntheses which form the substance of his essay, so far as he has got with it, are not so distinctly before his mind that they point inevitably to certain words and not to others. Even if he has written out his section-headings in full, these headings, as every writer knows, do not contain within themselves all the substance of the section, as a little pot of jelly is said to contain the substance of an ox; they are only helps, like finger-posts, to reader and to writer. If he is in the vein the words will run quickly and smoothly from his pen: he will not know what the words are going to be till his pen writes them; but as they are formed he recognizes them as the right words and adequately expressive of his thought, though till the words are written he could not have said exactly what his thought was. The only explanation which can be given is that the noetic scheme in subconsciousness is so definite and full that it points inevitably to those words and no others; and that those words therefore inevitably run from the writer's pen. This gives us that sense of exquisite fitness in the writing of the greatest literary artists; a quality which comes straight from the depth of the subconscious and which no laborious word-mongering will produce. But sometimes the right word will not come at once, and the writer is at a standstill and sets his mind ranging; after a time the right

word occurs and he puts it down. But in the mind-ranging process he is, as a rule, not conscious of trying first one word and then another and finally rejecting both for a third. Generally no word at all comes into his mind; he is not conscious of anything more than of feeling at a loss. To explain this I think we need the hypothesis of subconscious images; the mind subconsciously exciting a number of word-images which may suit and finally selecting the right one.

§ 14. Our intellectual work can all be classified as inventing or learning. Invention is so much the more interesting and honourable that I chose it to illustrate at length the working of subconsciousness. But the same principles hold good of the process of learning or receptive apprehension. A brief treatment only is needed here; but the matter is evidently important for the theory of education.

Consider the educand, as Professor Adams calls him, the person who is to receive instruction in some branch of knowledge: the first thing he needs is the desire to learn. If the educand has no desire, it is the business of the skilful educator to implant it. A very easy and effectual way is to put the educand with others, a little more advanced than himself, who have the desire to learn and are evidently prospering in the paths of knowledge. There is not much use in making appeals to the supraliminal consciousness or, to speak plainly, in



preaching; it is more effectual to let the desire of learning kindle and smoulder subconsciously.

Simultaneously with the desire to learn there springs into being the first vague comprehension of the matter to be learnt, a form so vague as to be utterly inarticulate, and therefore not present to focal consciousness. Then the synthesis grows more definite and extends itself over the field of study, always progressing by leaps, as the educand grows in his need and continually makes fresh syntheses to satisfy it.

Finally, the results of a completed education are mainly subconscious. When we 'know all about' anything—farming, or Greek, or the usages of polite society—that means we have accumulated an adequate stock of noetic syntheses, or, to speak more accurately, have acquired a permanent modification of the soul, such that we can always guide ourselves right and reject every suggestion that is wrong. For most kinds of knowledge it is not even necessary that a great stock of things should be definitely memorized. Some one has said that culture consists in having read a great many books and then forgotten them—a little cynical, but true in the main. The essential thing is to feel at home with the subject; when the agent feels perfectly at home, his training has been complete.

§ 15. The chapter may be brought to a close most fittingly by stating some definite reasons

drawn from the considerations just set forth why logic must recognize the subconscious. The principal reasons appear to be the following.

The logician who does not recognize the subconscious is leaving out the greater part of the facts which he undertakes to explain. Even in the narrowest and dullest minds psychic process is something much bigger, much bulkier so to speak, than the little brightly-lighted area of focal consciousness. The soul is in a state of continuous and potent activity, receiving from the bodily organism and giving to it, inventing and apprehending, learning and forgetting, desiring and repelling, thrilling with pleasure and pain, and passing at various times through the whole range of sentiment and emotion. Not merely then is a great part of our understanding subconscious, but also a great part of the non-intellectual elements of our soul-life with which our understanding is interfused.

Let me make this argument clearer by showing how it applies in particular to our function of judgment. Any given act of judgment cannot be understood or explained logically unless we recognize that it is made with some motive, that is, has behind it some desire which justifies its existence as an act of our rational life. Now at any moment by far the greater part of our desires are subconscious; if we deny their existence, by far

the greater part of our judgments are motiveless and unintelligible.

Moreover any given act of judgment, as it is actually made, is part of a wider intellectual context. Take the time-honoured example 'All men are mortal.' I cannot imagine it standing in real isolation; but it might very well form part of a tract on life-assurance. Let us consider the intellectual position of a man who is writing such a tract. All that lies within the momentary focus of his attention is just that one phrase which his pen is setting down; but it is necessary to a rational treatment of the subject that he should bear in mind a multitude of other things—some of which have reference to the present, some to the past, some to the future—the general plan of the tract, its details so far as completed, the fact that he is writing in English, the history of his subject as bearing on its present treatment, the class of readers to whom the tract is likely to appeal, and much else besides. Failure to keep all this in mind means failure of sanity; but it is far beyond the compass of focal consciousness.

Thirdly, if the logician recognizes only those judgments which are in focal consciousness, then the most important judgments of all, the purely formal judgments, lie utterly beyond his ken. An example of purely formal judgment was given in a previous chapter in speaking of musical invention. The

faculty of formal judgment is the primary faculty of understanding; and yet it is utterly beyond the power of focal consciousness. And, let the reader remember, it is no exceptional or choice faculty; we exercise it every time we make a purpose.

It hardly seems desirable to try to carry the war into the enemy's country and support this interpretation of the facts of understanding, by showing at length that other interpretations are wrong. One obvious remark to make is that, without recognition of subconsciousness, the working of the mind is impossibly abrupt and unintelligible. We judge and cease to judge. Why? What led up to it? Why did you stop there?—'All men are mortal.' Why do you say that? What follows from it? Why drag in Socrates? All that appears upon the surface is by itself as senseless as the jumping of marionettes. The logician who ignores the great mass of thought and passion below the threshold is like a little child held in his nurse's arms at Charing Cross, who sees great buildings and shops, and men and horses and motor-cars endlessly hurrying to and fro, and asks little childish questions about the scene, not knowing that what he sees is a piece of a huge complicated system, and that he who would understand it fully must bring into his mental view, not merely the rest of London, but also the greater part of the inhabited world.

## CHAPTER VI

### THE SOCIAL MIND

§ 1. Our concept of the individual is greatly extended by recognizing subconsciousness; but even then I doubt if it is adequate for the theory of understanding. There are most important features of understanding which cannot be explained unless behind the individual we recognize the existence of a Social Mind. I believe that when men act together with a common purpose, as organized into a society, they generate a common spirit which has some of the qualities of personality, and can to some degree be treated as a person. This may be called 'social mind' when spoken of as doing acts of understanding, and 'social spirit' or 'social will' in relation to volition. The doctrine opposed to it I call 'individualism.' Individualism assumes that when men are organized into corporate bodies they are not different from what they are when taken separately; a society composed of a hundred persons is just a hundred individuals arranged in a certain way, and the ties which bind them are all external. The individualist lays great

THE SOCIAL MIND

stress upon the separateness of persons: each man is very distinctly himself and very distinctly nobody else; he is shut up in an impermeable case like a man in a diving-suit, and moves among others who are similarly enclosed. There is no loneliness like that of personal souls, if the individualist is right: the planets move in their orbits through a space which is quite dark, intensely cold and devoid of life and sound; so also individual men and women pass along their ways of life in a medium entirely alien to spirit: across that lifeless gulf they can signal to each other; but they can have no closer communication.

§ 2. Let me now explain what logic stands to gain from the social-mind theory. The argument is something similar to that in favour of subconsciousness. The individual is too isolated and too small to account for certain important and familiar facts of human understanding. The individualist cannot explain the solidarity of the intellectual life of the individual with that of the individuals around him, nor the force with which the intellectual life is pursued, nor the valuation with which it is regarded.

The question of solidarity will be discussed presently. What I wish to put in the forefront of my argument against individualism is the incapacity of the individualist to regard knowledge as a worthy object of human endeavour. The

most important thing in the distinctively intellectual life, the life of the scholar and of the intellectual creator, is its enthusiasm: the generous glow of the mind is what we admire even more than the results which are achieved by it; and this is something which individualism can by no means explain or justify. The weakness of individualism is that it makes the individual look absurdly overstrained, claiming responsibilities immensely too great for any single person and boasting of powers which are absurdly beyond the patent facts. The isolated individual—how weak, fluctuating and transient a creature he is! But in that small place the individualist must assume that the mighty and enduring flame of intellectual enthusiasm arises, taking its source one knows not how and maintaining itself for a life-time out of those scanty resources. And what of the sum of knowledge, that noble store of noetic syntheses which the human intellect has achieved? Does it really exist in individual minds alone?

Our attitude towards these facts of the intellectual life is, I hold, much more rational and human if we assume that each personal mind is not thus isolated, but touches directly a great body of spiritual energy which explains so much that individualism leaves unexplainable, and dignifies so much that individualism must hold cheap. If there is a social mind or spirit which desires know-

ledge and contains the sum of knowledge, then we can understand better how that divine enthusiasm arises, and how it is nourished and endures through years of manifold discouragement. And we must take a more hopeful view of the results of intellectual striving. The individualist can reckon up nothing but actual performance—so many pupils educated, so many pages printed. But consider by how much failure exceeds success; how many enthusiasts competent to write and teach pass away with no book written and no pupil even to carry on their tradition. And again consider the enthusiasts with great love of knowledge and yet with little power, whose gifts are small though their ardour is great; scholars who take no prizes and stand low in the class-lists, whose minds cannot avail to make their thoughts take shape and body. Is all this wasted and of no account? I do not think so. Certainly it is not, if there is a social mind which is enriched by these efforts, and will one day help into being the fair fruits which are beyond the power of those less gifted souls.

§ 3. To return to 'solidarity.' By this phrase I mean to express the doctrine that the individual forms part of his society, and does work with his society in a way which cannot be explained by individualism, but can be explained by the social-mind hypothesis. The first fact which may be adduced in support of this is the power of societies



to influence their members. The most familiar of such cases are those in which a certain 'tone' pervades an institution. A university is a good example, because it is usually pervaded with a distinctive tone, which makes itself felt all through the institution and is traceable in all of its members who are in any way susceptible. The tone is not any sort of cut-and-dried formula which can be expressed in words; it is a way of looking at things, a habit of emphasizing some common human interests and neglecting others, and is as easily recognizable as those variations of mood in individuals which we feel acutely, though we can only describe them vaguely as cheerful, or friendly, or sullen. We find tone of this kind in all sorts of institutions, educational, ecclesiastical and commercial. Education consists to a very large extent in sending young people to some institution which is regarded as having a good tone, with the confident expectation that the tone will be acquired. Usually the tone acquired by a man in youth endures through life. But some impressionable or versatile individuals are quick at catching a new tone; such people are specially suited to be negotiators or diplomatists. Trivial though amusing examples of this ready adaptability occur in Casanova's *Memoirs*. That wonderful scoundrel spent his life wandering through every country in Europe, and we can notice a distinct change of manner

corresponding to the country in which he is at home for the time: in England he is blunt, practical, with a touch of eccentric originality; in France witty, elegant and frivolous; and different again in Italy and Spain.

The tone of a nation is national character. It is of course influenced in no small degree by race and climate; but psychologists are inclined to hold that these are secondary influences operating slowly through long periods of time, and that the main factor is tradition. Mr William McDougall proposes an imaginary experiment. If all the English babies could be miraculously spirited away at birth and replaced by French babies, there would, he argues, be no proportionate change in national character, though the race would have changed entirely in one generation.

These are examples of a settled long-enduring influence of society upon persons; equally striking are those in which the influence is occasional. Such are the waves of feeling which sweep the country at election-times when the voters who have not definitely identified themselves with one of the great party-organizations seem all to vote in one direction. Another familiar example is the psychology of mobs, as explained by Le Bon. He has shown that the persons composing a mob may act in ways which are very different from their behaviour as individuals. A mob is more violent

and suggestible than any individual; it is capable of greater extremes of baseness and brutality, and also of heroism and devotion, than any of its component members.

§ 4. The dominant factor in producing social tone and character is a certain direction of the will in the members of the social body. A society which influences its members strongly is one which is pervaded by strong and definite desires. When a society changes its character the change is due to the failure of old desires or the incoming of new ones. For example, the continuity which is clearly traceable in English character from the early days of our literature till the present testifies to the persistence of certain desires—a love of personal independence, a desire for the comfort and privacy of a separate home, a love of out-door exercises requiring muscular strength and skill, and so forth. In minor organizations the basis of the tone consists of certain prevalent desires; in a school the desire to excel in certain departments of scholarship, or not to excel, as the case may be; to excel in athletic sports; or to be scrupulous in certain points of manners or morals. Thus also a mob is not a mere fortuitous gathering, as people are who collect in the street to see an accident; it consists of people animated by a common desire. The notorious mobs of Paris during the Great Revolution and during the Siege were intensely desirous for certain

objects and did their strange doings under the influence of that desire.

It is when men are associated together with common objects in view that a social spirit is generated; and the social spirit is strong in proportion to the strength of the common desire. The decay of a nation is due to the fading of its desires, or to the fact that the objects on which its heart is set become unattainable. The ordinary tests of decadence, failure of military strength, disorganization of the public service, bankruptcy, decline of population, decay of literature and disappearance of culture, are nothing but the outward visible signs of that inward spiritual extinction. So too we must explain the rise and decay of minor societies; the corporate spirit which they generate waxes and wanes with the enthusiasm of their members. And the social spirit has an intellectual as well as a volitional side; as a social *mind* it is a consciousness of the objects for which the organization exists.

Recognition of the fact of social tone is all-important for literary criticism and for the general understanding of a nation's intellectual life. We all know how utterly different the literary style of one period is from that of another, even when separated by so small an interval as 50 years. Here lies the opportunity of the clever parodist, whose art is so much fostered by our present system

of classical education; he stands detached from absorbing influences and therefore is free to show his wit in mimicking an intellectual tone which belongs to the past. The scholar's business is to study the same things more seriously and to prove how superficial features such as choice of theme, vocabulary, and all that in general we term literary style, were related to the desires which dominated the leading minds of the age.

Another point of criticism which finds its proper mention here is the difference between classical and decadent literature; the classical writer devotes himself mainly to the whole, the decadent to elaborating the parts. Decadent writers arise in decadent social conditions when the great totalities before men's eyes are not interesting: classical writers are produced by periods of national expansion and hope, when far-seen vistas open out to the view even of commonplace men, and the bases of life take on a new meaning and glory.

§ 5. I would argue that the theory of the social mind has advantages over individualism as an explanation of social products such as language, law, institutions and art. Language is perhaps the best and most familiar example. The problem is as follows. Languages arise without conscious design; they grow up among barbarous or unlettered peoples without the slightest help from grammarians: and yet they show the most el-

borate and strictly logical structure. The more unsophisticated they are, the more elaborate they are; abounding in a complicated yet orderly wealth of declensions, conjugations, numbers and genders. Now how does all this come about? Take the Greek language for example. The individualist must argue that it grew into the shape we know by the uncoordinated and unpremeditated effort of generations of quite separate individuals. But is this really possible? Consider its logical arrangement. A standard Greek grammar and syntax forms a considerable volume full of elaborate rules and still more elaborate exceptions each based on some sufficient reason of convenience or elegance. The most ingenious artificial system, Pitman's shorthand for example, falls immeasurably short of the simplest natural language. Consider again the uniformity of character which pervades a language such as Greek and its continuity of character enduring through centuries. The same line of argument applies to a national system of law such as the Roman. And here the argument is in some respects more striking: since many of the greatest jurists were not of Roman or even Italian birth; but foreigners from the East who worked in Rome and assimilated the national spirit. For the same reason mere birth matters very little for literature and art so far as the social element is concerned. The work of the German

schoolmen is indistinguishable in character from that of the French schoolmen; because both were dominated by the influence of the medieval Church: the many Anglicized foreigners who, like Rossetti, have been trained and worked in England belong truly to our national art and literature.

To return to language. More credible than the individualist hypothesis is the social-mind hypothesis to account for the elaborateness, logicity, fineness of adjustment, uniformity, and continuity of character which a language such as Greek displays. We must think of what we call the genius of the Greek nation as embodying itself in a really existing and potent, though intangible, national spirit, sufficiently conscious of the national aims to understand how to make national speech fit with them, and influencing the individual so that he unflinching helps to develop the national speech upon the established system.

§ 6. We are almost irresistibly impelled to some sort of social-mind hypothesis by the strange facts of animal societies. In such a society as the hive two facts stand out most plainly. One is the social capacity of bees; as working for the hive in ways prescribed by the immemorial hive-organization the bee displays marvellous powers, both of intellect and of moral devotion. The other fact is the individual incapacity of bees; they have no notion of helping each other or themselves when

put into circumstances for which the hive-training has not prepared them. The latter fact prevents us from supposing that the wonderful organization of the hive is due to individual contrivance. Some students have taken up the explanation that bees and ants have no consciousness at all, but are mere automata. The question is still under debate; one can only say that the best and most recent observers are against the mechanical explanation, and that no one has made the least approach to showing in detail how such automatism is possible. Nor has Bergson's view, that instinct (which animates bees) is something totally different from human intelligence, obtained the assent of students who have specialized in this line. There remains the social-mind theory. Maeterlinck, whose poetry must not blind us to his capacity of scientific observation, makes constant use of the phrase, "spirit of the hive." With him it remains indefinite and unexplained; but I see no reason to shrink from giving it a definite meaning. I venture to suggest that the explanation of the marvels and contradictions of the hive is that bees have souls of such a quality that they generate a social spirit of great power both in intellect and will, which guides and inspires individuals; but that by itself the bee-soul can do little.

§ 7. I must confess that the class of facts in favour of the social mind which appeal most to



myself as a student of philosophy and literature are those which suggest a causal connection between eminent thinkers and the needs of their age. It has always been remarkable with what opportuneness great men appear. At the time when the national energy of Athens was at its best there came forward all at once the poets, historians, philosophers and artists who still delight and instruct the world. So too with the Augustan age in Rome and the Elizabethan age in England. Now what determines such opportune appearances? Walter Bagehot's explanation was that men of this calibre are continually being produced, but that mostly they fall on evil times and come to nothing, like men with a genius for warfare who live in days of peace. But this is a fallacious parallel. The demand for war is intermittent; but there is always a demand for literature and philosophy, which in the lean seasons is supplied by inferior men. If Bagehot was right in holding that in all seasons there is an equal supply of good men, how would he explain the fact of their non-appearance? What ought to happen is that they write to some extent, but fail of adequate recognition. But this does not happen. This throng of mute inglorious Miltons is altogether improbable; there is no proof of their existence, and every reason to think that if they did exist we should be able to trace some of them. I believe on the contrary that

small ages produce small men; and that great ages produce great men. There are times when great desires and hopes are current; and these acting, not externally, but straight through the social mind, produce choice natures and shape them to great enterprises in literature and in thought. And these noble intellects in their turn react profoundly upon the social mind of which they are the living expression.

§ 8. The theory which I am defending is admittedly speculative and will have to look for detailed confirmation to the researchers of the future. It seems to have enough in its favour to render it probable; but on the other hand there are difficulties which it would be impolitic to conceal. Some of them may be mentioned as a help to further elucidating the theory. We may put them into the mouth of an imaginary objector. I do not see, he may say, where the production of social minds is to stop. Many people may think it not unreasonable that there should be a social mind for an organization so ancient, august and extensive as the English nation. But is there one also for each of the smaller nations—for Scotland, Ireland, and Wales, not to mention Jersey and the Isle of Man? And what about larger aggregates? Is there one for Great Britain as a whole, or for Great Britain and Ireland, or for the British Empire, or even for England and France as members of an

*entente cordiale*? Again, consider the organizations contained within a nation. Many a loyal churchman would claim a social or corporate spirit for such a body as the Church of England. But what of all the other smaller societies, religious, commercial, educational and scientific? And what of those whose objects are merely festive or convivial? Then, how long must a society endure before it generates a social spirit? Will a year suffice? Will a month, a week, a day? And what of casual associations? Is there a social mind for the passengers on a liner? Is there one for the party on a river steamer? Turn to private life. Has every household a social spirit? And if so, what is a household? Is a college a household, is a hotel? Is there a social spirit in a flat tenanted by one maiden lady and her servant?

A different class of difficulties must be mentioned. This social spirit—where is it? Where does it reside? In the case of a business corporation, is it in the secretary's office? And what becomes of it when the society is not assembled? Is it relighted and extinguished like a candle at every meeting? And what becomes of the social spirit when the society is dissolved? What became of the national spirit of Poland when it was partitioned among the neighbouring powers? And what became of the spirit of the Church of Non-jurors when that church ceased to exist?

In the present state of our knowledge I doubt if all these difficulties can be fully cleared up; but certainly some answer can be made to them. The line of my answer is that the difficulties about the social mind are of like nature and not much greater than those about the individual soul. For example, there are excellent reasons for believing that adult rational human beings have souls. But what of individual creatures whose existence is as trivial or temporary as a trivial or temporary society? What of very young children and of human infants who have never had a separate existence? What of the feeble-minded and the hopeless idiots? And what of animals? If a soul is granted to man, it is very hard to deny it to the higher animals. And then how far down in the scale of life must we go? Have fishes and insects souls? Furthermore we can parallel the difficulties about the local position and dissolution of the social spirit with similar difficulties about the individual spirit. Whereabouts in the body does the soul reside? And what becomes of it during insensibility and after death?

Nor are the difficulties of the generation of the social soul greater than those of the generation of the individual soul. The individual soul must come from somewhere; once it was not, now it is. Whence then did it come? There must be some source, some reservoir, of soul-life whence individual souls

are fashioned. Nothing in experience forbids this. We cannot say, indeed, that we are not surrounded by a soul-element, and that the whole universe is not pervaded by soul-life whence individual souls come into being as they are wanted. We know so little, ultimately, about the individual soul that we cannot dogmatize about what produces it or what it is capable of producing. The important thing is that we should not shut ourselves up in a short-sighted scepticism, and refuse to believe in souls in the same sort of way that some people in the 'back-blocks' refuse to believe in microbes or the emanations of radium.

§ 9. In our use of the theory of the social mind we must maintain the human standpoint and see that the rights and advantages of the individual are not endangered. The danger would be to regard the individual as merely generated and guided by the social mind, and therefore as having no responsibility or initiative. This would be disastrous, inasmuch as it would attack individual freedom from a new quarter. What we want is to enhance the value of the individual, to make his responsibility more grave and his personal intervention more momentous. It is easy to do this if the theory of the social mind be interpreted in the right way. It was the mistake of Hegel to exaggerate the theory into falsehood, and to swamp the individual in society. The danger is the same

in religion: we want God to stand behind man; we do not want man to be absorbed in God.

These considerations may be exemplified by considering briefly how the social-mind theory enhances the value of the individual in knowledge. The matter stands rather differently according as the subject is one to which the thoughts of men are commonly directed; for example, the social mind counts for more in a political theory than in a chemical theory. A political theory, that of Hobbes for example, I believe to be in large measure the product of the social mind; so that it is absurd and most misleading to attempt to explain it without a full statement of contemporary political conditions. On the other hand it is through the individual alone that it comes to expression, and he gives it all the particularity of the form in which it appears to the world. The importance of expression is very great. Without expression, as we saw in a previous chapter, thought is inarticulate and, so far, incommunicable. Felicitous naming, felicitous phrasing add enormously to the power of thought. Good ideas moulded into good form will make a monument more perennial than brass and loftier than the pyramids of buried kings; but, if the form is not good, they are destined to be absorbed while their authors are forgotten.

With a subject like chemistry, upon which the social mind does not bear directly, the share of the

individual is greater. Here I believe that the social desire has only general influence; it determines only the appearance and general character of the minds that devote themselves to such studies. This does not mean that the chemist must stand higher than the political philosopher; because the exponent who is closer to the common mind gains in majesty and power what he loses in independence. But I cannot imagine any branch of knowledge which does not gain by association with the social mind; nor any kind of student whose enthusiasm and consciousness of value will not be enhanced by the thought that the structure of knowledge to which he devotes himself is nothing accidental and capricious, nothing which has been dominated in its conformation by the chance appearance of some potent though erratic personality, but an organic growth essentially connected in its origin and character with the most necessary, permanent and inclusive of all human institutions.

## CHAPTER VII

### PASSION

§ 1. The first part of my task, the explanation of the nature of understanding, is now finished; there remains the second part, to explain how understanding is related to the dynamic element of the soul, which I call 'passion.' By 'passion' I mean to denote our tendency to respond to any sort of motive which makes call upon our personal energy. Passion is what we exhibit when we are eager, whether to pursue or to get away; when we are warm and zealous, whether in love or in hate; when we show enthusiasm or abhorrence.

What has been said already implies a connection between understanding and passion. The soul is essentially dynamic and exhibits energy throughout. And understanding is not a separate thing in the soul; but a function of the soul as a whole: it is the whole soul, not a part of the soul, which understands. Passion therefore must be felt in every act of understanding. How we are to conceive the relation between understanding and passion, and what the results of the relation are in actual



working, the ensuing chapters will attempt to show. First, however, it is necessary to state more precisely the meaning of 'passion,' by saying what kinds of passion there are, and by showing how passional terms and conceptions in current use refer to the different kinds of passion. The statement must be brief and provisional. For we cannot really know what passion is till we know what it does; and the work of passion in relation to understanding will not be entered on till the succeeding chapter.

Let us begin at the bottom and work upwards. We have a power, we need not ask how we get it, of valuing the different kinds of passion; some we feel to be low, others higher. The lowest kind of passion I call 'appetite.' How then do we recognize appetite? How distinguish it from the other kinds of passion? Plato used language which suggests that appetites are an indiscriminate and unruly mob; and it is notoriously difficult to decide where a mob begins or ends.' This seems to me mistaken; appetites have a certain order among themselves, they are subordinate to one master desire which appears in double form as desire of life and reluctance to die. This may not be so apparent in the more advanced kinds of living creatures, but it is plain in the humbler. The more lowly a creature is in the biological scale the more evidently we may see that all its particular appetites, all its strivings and strugglings, are

manifestations variously differentiated of that universal and primeval passion. The characteristic, then, of an appetite I take to be this, that its motive is the attainment of something directly or indirectly conducive to the immediate continuance of the agent's physical existence.

Without going into the question by what criterion we judge of the different kinds of passion as high or low, it is easy to give reasons for putting appetite in the lowest place. All passions cause us to deal with objects, and in appetite the agent is interested in the object only so far as it ministers to some bodily welfare or pleasure. Such merely self-regarding conduct requires no deep knowledge of the object. The cat which eats a bird is no ornithologist; the squaw who breaks up a tree-branch for a fire is no expert in timber. And yet both bird and tree have each a vast intrinsic nature of their own: and they have had a long past; and might have had a distant future. Appetite, then, is short-sighted; and, because it is short-sighted, it must be wanting in ability. The agent whose motive is mere appetite does not see far around him, he does not form distant anticipations; he does not penetrate into the nature of objects. This makes him weak, and he lies at the mercy of creatures who have risen above his level. Because his power is small, and his mind narrow, and his sympathies dull, we look down upon him and pity

him; nothing would make us change our lot for his. Better fifty years of human anxiety than a cycle of happiness as a horse.

But, because appetites are the lowest and simplest of the passions, it does not follow that they are unimportant. As we shall see later, primitive understanding is essentially connected with primitive desire; and the highest understanding is in a measure primitive to the last. Appetites have an importance no less great than that of the organic sensations with which they are connected. The psychologist tells us that organic sensations such as hunger, though altogether inferior intellectually to delicate sensations such as sight, have paramount importance because of their massiveness, pervasiveness and intensity. So also it is with our fundamental desires and aversions.

§ 2. The next higher kind of passion is affection, such as a parent experiences towards a child.

It is by a natural evolution that creatures progress from the stage of appetite to that of affection. The mere desire of life made them evolve from reproduction by fission to sexual reproduction: for, without differentiation of organs, a creature remains very weak; and, when organs have been differentiated, reproduction by fission becomes impossible. And the same desire leads onwards from ways of reproduction which require no parental

care to ways of reproduction with parental care; for with parental care a less number of offspring are needed, and thus the creature has more strength left for maintaining its own existence. But with parental care we enter upon the stage of affection. I do not mean, of course, that affection is nothing more than appetite transmogrified or somehow cunningly disguised while remaining essentially the same. It is really different, because it involves something new in the soul and the cognition of a new aspect of the world. I only argue that it is characteristic of the lower stage by its own intrinsic evolution to push the agent on to a higher.

We feel the stage of affection to be higher than appetite; and I do not wish to explain that ultimate personal valuation, or to analyze it into something other than itself: but it may be pointed out that affection has manifest qualities which would induce common sense to recognize it as superior. Affection is of such a nature that it prompts us to a more enduring and intelligent interest in objects. Appetites make only a transitory effect upon the soul; such is the experience of the voluptuary. Dinners are things of an hour or so and hardly leave a trace upon the memory; but wife and friends last as long as our lives, and children longer.

A common phrase to express our sense of the higher value of affection is unselfishness. Selfishness (which is not the same as egoism) is the term

of reproach which we apply to the man who has the characteristic short-sightedness and dulness of a mind predominantly under the sway of appetite. Affection increases our power and so is profitable for the self upon the whole. But in many ways it involves sacrifice, and the man who undertakes sacrifice willingly is praised as unselfish.

§ 3. The highest kind of passion I would call by the term 'valuation.' Primarily it is directed upon persons who are regarded as co-operating in a good system. Valuation requires a cognition of the intrinsic qualities of the object; for we must estimate the capacity of the object to co-operate in the system. It requires, then, more intelligence than affection. The affections are very strong among the higher animals; while valuation is non-existent, or, if existent, certainly very hard to discern. An affection such as the parental implies no discernment of the intrinsic qualities of offspring. We see this even in human parents, who sometimes cherish very unattractive, or even imbecile, children with an extreme warmth; while animals seem to recognize no difference at all in the intrinsic qualities of offspring. Nevertheless, the foundation of our unselfish interest in objects is affection; valuations which are connected in no way with affections have little strength or permanence.

It frequently occurs that the same person is regarded both with affection and with valuation,

that is, he is prized both as an individual and as a member of an organization. In any particular case it is often hard to say which element predominates; most holders of high office enjoy a certain measure of both. For example, any monarch who is not conspicuously bad enjoys immense respect and deference; but often it would be hard to say whether it is due to his position or to his purely personal qualities.

Valuation is primarily directed upon persons. We value much that is not immediately personal—abstract qualities and inanimate things manufactured or natural; but all these non-personal valuations can be shown to depend ultimately on personal valuation. Aspects or qualities of persons, as mercy and justice; or things which have been made by persons; or things which have the look of making, as the delicate natural shapes of flowers—such are the non-personal objects which we value. And here, we may note in passing, is the connection of art with society. There is no such thing as solitary art, or solitary appreciation of beauty, though Wordsworth seemed to think so. For the lover of beauty infuses nature with personality; and persons are not valued save in relation to some social system.

Man is led upwards from the stage of affection to the stage of valuation by a perfectly natural process of development. The transition is made

when offspring remain so long under the care of parents that parents and offspring form an organization. In civilized settled society the organized family makes what we call a home. Birds have nests and foxes holes: but their young grow up so quickly that it is impossible for them to make a home; nor do their offspring co-operate with them in work. But man by nature is inclined to make a home. The high intelligence of man as compared with the highest of the animals demands a prolonged education and a prolonged infancy for his offspring. Children grow up slowly, and, as they gain in strength, learn to help their parents in the work of the home. Thus the human family forms an enduring system far beyond any infra-human family. In order that the family may prosper, a family sentiment must arise and a practice of family valuation; each member must desire the common weal to which all contribute, and must value the various members of the family in proportion to their contribution. And we have a similar sentiment and a similar valuation in regard to the wider organizations which spring from the family.

Thus in its origin and in its primary form valuation is a practical tendency leading to effective action. It is a passion which man could not do without; it is necessary to the continuance of society. A genuine patriot is no mere looker-on;

he must himself exhibit some measure of the qualities belonging to the heroes whom he admires. The mere looker-on can be said to 'value' only in some derived and secondary sense.

It makes much difference to a man's capacity of valuation whether he recognizes adequately the wider as well as the narrower associations of which he is part. Failure to recognize the wider claims causes moral inconsistency. A man may, for example, cherish an ideal of family life while pursuing a line of commercial behaviour which is really incompatible with it. In the best moral agents there is an effort to systematize the moral life by recognizing in their due degree all the social institutions of which we are members. This brings a gain, not merely in consistency, but also in warmth and energy. For the comprehensive ideal has a magnificence which stimulates and sustains the agent to tasks far beyond men of narrower valuations. I think that the worth of wide valuations appears most when men are growing old. A man whose interests are limited to a family, or an office, or even to a profession, is inclined to tire and degenerate. The wider interests wear better; and if acquired in youth last a lifetime, and indeed grow keener as experience clears and broadens one's mental vision.

The systematization of the moral life is, then, not a task which rests all upon the individual.



Indeed, the thought of a man deliberately setting himself to make an orderly arrangement of his valuations is intolerably priggish. Society—using the term in the widest sense—is a system ready established. A man has only got to value the various elements of society in the order in which he finds them, and his moral life is systematized without trouble.

§ 4. Current passional conceptions should be interpreted through the foregoing analysis; to begin with utility. Utility in the first instance should mean that quality in an object which fits it for the satisfaction of appetite, as toffee is useful to a schoolboy, or an umbrella is useful when we are caught in a shower. Thence it is applied to any object which is helpful for some purpose, whether appetitive or otherwise, but is not regarded as intrinsically valuable. Confusion of thought arises if we transfer the term utility to the objects of our higher interests; it is a terminological inexactitude, beside being an insult, to call a wife or child ‘useful.’ So also I would deprecate the phrase of the golfer who calls a good stroke ‘useful’; a golf-ball is useful, but a good golf-stroke has value in itself.

These simple considerations were overlooked by the Utilitarians, who extended the term utility beyond all proper limits, and flattened all our motives down to the level of the lowest. How

dreary and unconvincing was their explanation of human conduct! How absurd to reduce push-pin and poetry to a common measure and count the units of utility which each contains! It was a fine phrase of Victor Hugo's that, as a man cannot live *sans pain*, so he cannot live *sans patrie*. But the utilitarian would take it all literally, and say that our need of *pain* and of *patrie* is just the same in kind.

§ 5. It is due, I suppose, to the past predominance of utilitarianism in British thought that the sentiments have been fully recognized only in recent years. In the psychology of James and John Mill patriotism could only be a desire for some sort of pleasure and our native country lovable only because of its utility. Now that the sentiments are not explained away in this fashion they are recognized as one of the most important elements of character.

So very recent is the recognition of the sentiments that the terminology has not been defined precisely. Some people would apply the term 'sentiment' to the affections of the animals, as the sentiment of the hen for her chickens; though perhaps 'instinctive affection' would be used more commonly in such cases. It is not necessary to my present purpose to demarcate all these terms; but I should be inclined to retain 'sentiment' for those of our dispositions towards persons or

personalized objects which evoke our valuation, or for those human affections which are so intelligent that they approximate to valuation. The most important, of course, are those between kinsfolk: but there are many others, some of them not generally recognized; the community-sentiment, which in its most extended form is patriotism; the sentiment towards leaders, including the holders of all offices; the sentiment towards pretty and dainty creatures; the home-sentiment towards the place and things among which we pass our life; and last, but far from least, the self-sentiment, that is, our affection for all objects intimately connected with our personal existence. Favourable sentiments of this kind I take to be primary; unfavourable sentiments are secondary inasmuch as they presuppose the primary. Without the social sentiments we cannot hate those who attack or otherwise impair the conditions necessary to those sentiments; unless we love our home, we cannot hate those who destroy our home; unless we love prettiness and daintiness, we cannot dislike things which are ill-shapen, coarse and dirty.

What is the relation between sentiment and emotion? To discuss the question fully would need a long psychological digression. I can only say here that I venture in some measure to disagree with the views of Mr William McDougall while acknowledging the great advances which are due

to him. He appears to regard emotion as prior to sentiment, and to hold that sentiments arise by the organization or concretion of many separate emotional experiences, as skill in playing an instrument arises from many successive hours of practising. But it seems truer to say that sentiment is prior to emotion. Sentiment is a psychic disposition which manifests itself in a certain kind of behaviour towards some object or class of objects; while emotions are psychic disturbances caused by events which touch the object in various ways. As Mr Shand says, the same sentiment may give birth to the whole gamut of the emotions.

“In the love of an object there is pleasure in presence and desire in absence, hope or despondency in anticipation, fear in the expectation of its loss, injury or destruction, surprise or astonishment in its unexpected changes, anger when the course of our interest is opposed or frustrated, elation when we triumph over obstacles, satisfaction or disappointment in attaining our desire, regret in the loss, injury or destruction of the object, joy in its restoration or improvement and admiration for its superior quality or excellence. And this series of emotions occurs now in one order, now in another . . . when the appropriate conditions are present.”

If this be true, it follows that a sentiment towards a certain object cannot be formed from emotions; since the emotions connected with any one object are indefinite in number and are aroused in the most various combinations according to varying circumstances. Moreover experience shows that some sentiments certainly do not grow up slowly

by the accumulation of emotions. For example, many a man before he becomes a father has experienced no parental emotion worth mentioning; but on the birth of his first child a parental sentiment springs into being very powerful from the first and capable of generating the appropriate emotions.

The dyslogistic use of the term sentimental is appropriate to cases where the agent shows a want of consistency or proportion in the valuations which compose our sentiments. It is sentimental to weep over the photograph of a mother who was neglected during her life-time; it was sentimental of the Russian lady to feel deep pity for the sorrows of the operatic heroine, while leaving her coachman to freeze on his box outside the theatre. The sentimentalist exaggerates the value of certain minor sentiments, while the truly important ones have a weak and uncertain hold upon him.

§ 6. It will be noticed that I have said nothing of volition as a motive of conduct. Volition or will, I hold, is not a motive like the passions, but is rather a general energy whereby the agent throws himself vigorously into the line of conduct which he has chosen. It is doubtless reinforced by some special instinct or sentiment, such as the instinct of self-assertion, or the sentiment of patriotism; but is not to be identified with that or any other motive: it is a function of the self as a whole.

Every student of psychological analysis knows how hard it is to say at what stage of development volition appears and what is its relation to the rest of personality. Has a persevering spider a strong will, or any will at all? Has a bull-dog, or a mule? Has an obstinate schoolboy? Had Pharaoh, King of Egypt, who refused to let the people go? Most persons would agree that will is something different from perseverance, or obstinacy or even self-assertion. In all these forms of whole-hearted action the agent throws himself entirely into the act; but volition, it seems to me, cannot be said to exist unless the agent takes a comprehensive survey and is maintaining some sort of scheme of life. If that is true, volition cannot exist without systematic valuation. We should deny a strong will to the bull-dog and the young child; we should not grant it even to Pharaoh, unless we knew that he was sufficiently intelligent to appreciate the bearing of his act upon his life and position as a whole.

Thus I should agree with those who in the past have criticized the gospel of self-will by pointing out that a will which wills itself only wills nothing. "Be not like dumb driven cattle, be a hero in the strife." Yes; but what strife? Such precepts are meaningless, and all the gospel of will for will's own sake has an empty, metallic sound. The bare form of will needs to be filled with concrete, living

passion. The opposite mistake is to deny volition altogether; as though man could not move except so far as motives moved him. Analysis cannot explain away the act whereby the agent, in accordance with his judgment of what is best, throws the weight of his personality in one direction.

§ 7. Principles are the various elements or aspects of a scheme of life; and thus a man cannot have principles without will, or will without principles. Popular thought may not have realized this distinctly; but it has realized it sufficiently to make common language agree with what has just been said. No one attributes principles to animals or young children; children only have tendencies which principles subsequently may confirm or counteract. 'Good principles,' 'high principles,' surely imply an orderly survey of conduct. We hear less of 'bad principles'; bad men are usually 'unprincipled.' But that is because badness is naturally anarchic, and due more to the temporary abdication of reason than to the effort of reason in a wrong direction. And 'principles,' of course, imply volition behind them. The sinner who said that he saw and praised the better things, but followed the worse, certainly could not be credited with principles. 'Principle' is a priggish word; and has something of the emptiness of will. That is because they are both external, and only have reference to the framework of life, not to its filling.

PASSION

But Enthusiasm is the most gracious word in the vocabulary of passion—warm but sensible. The very use of the term is evidence of the moral progress of the nineteenth century. The ancients had no such word; our fathers, having come to feel the need of one, adapted an old word which meant in the generation before them the ill-regulated violence of religion. What it means exactly now can only be seized by thinking over examples of its use. It is not merely the same as keenness or eagerness; we can be eager about many things for which there can be no enthusiasm, as a good dinner or a big ‘scoop’ upon the Stock Exchange. And yet a man can have enthusiasm as a student of cookery, or even as director of a financial institution. The explanation seems to be that enthusiasm can be felt about objects of value, but not about objects of selfish desire. And it is also necessary that the agent should take a wide survey and value the object not for itself only but in relation to a wide scheme; the wider the scheme, the higher the quality of the enthusiasm. The best and purest and sanest enthusiasms are those in which the agent not only values objects in relation to his total scheme of life, but his life itself in relation to the wider issues of humanity.



## CHAPTER VIII

### COSMOTHESES AND PASSION

§ 1. It is not yet time to state the relation between understanding and passion: the matter could not be made clear at the present stage; it must stand over till we have seen how passion co-operates in the actual work of understanding. Only by working does anything disclose its real nature. To learn what passion is and does we shall find it convenient to begin with cosmothesis; the meaning of which term I now proceed to explain.

The main difference between ancient and modern philosophy is often said to lie in this, that the ancients were more objective and the moderns more subjective. Put into plain language this means that the ancients were more inclined to take the world as ready-made to consciousness; they thought, as unreflecting people do everywhere, that the world would be just the same even if no consciousness existed: the moderns, on the other hand,

have come to see that the world is not ready-made, but is in a sense constructed. All this has been commonplace since Kant's time. But it was not till modern psychology arose that men learnt that the subject also is nothing ready-made, but is constructed *pari passu* with the world. This two-sided process is what I mean by 'cosmothesis': we are familiar with the ordinary work of understanding in judging and inferring; but behind that there is the prior and fundamental business of constructing a self to work and a world to work in. 'Cosmos' is the total inclusive system of which self and world are the two sides.

Who is it that cosmothesizes? the individual or the race? On the world-side, mainly, the race. This answer is true independently of the social-mind theory set forth in a recent chapter. Even if individualism were true, I should still hold that the world, like language, is made by personal minds acting somehow together, not individually. The fact is that each man at birth comes into a society in which a certain world-scheme is prevalent. This scheme he acquires; how exactly we need not ask: his personal contribution to the scheme is of minor importance. On the other side, again, the construction of the self is not all the agent's own work. The self grows up in the most intimate connection with the world; anything that influences one influences the other. So may

one justify the use of one term, cosmothesis, for the double process.

The principle which the present chapter will endeavour to establish is that passion has an indispensable share in the cosmothetic process. I propose now to review the various stages of cosmothesis to show what the share is.

For the earliest stages the inquiry must be imaginative and conjectural. Has the reader ever speculated what things seem like to a worm which lacks sight, hearing, taste and smell, and has kinaesthetic and tactual sensibilities very different from ours? For such a creature the greater part of our cosmos does not exist; and yet we must try to form some notion of what is left to it.

§ 2. I do not think it profitable at present to go further back in the scale of life than to creatures which have the power of movement, and show by movement their desire of life and avoidance of death. Such a creature is the little piece of protoplasmic jelly called an amoeba, which may be seen crawling or rolling itself over the leaves of water-plants searching for food or striving to escape the pursuit of a larger amoeba which is trying to devour it. Now with the evident desire of life there is correlated even in this humble creature a certain cognition of objects. For both in pursuing prey and in escaping an enemy it directs its movements in one way rather than in another,

according to the behaviour of the object in which it is interested. Furthermore, the cognizance of objects implies cognizance of self. For in working upon the object the creature must distinguish the object upon which it works from itself which does the work. And all this must be true of every moving creature.

Here is the beginning of cosmothesis. Both the self of the amoeba which cognizes and acts, and the object which is cognized and acted upon, must severally be cognized by the creature as having some degree of system; otherwise its behaviour would be chaotic: and taken together also subject and object must be cognized as forming a system, that is, a cosmos, however rudimentary. We must credit the lowest active creatures with so much mental power.

But, someone may object, is all this warranted by scientific observation of the lowest forms of life? Some years ago we should have been compelled to admit that it was not; to-day things are rather different. Ordinary amateur nature-lovers have always taken for granted that animals cognize objects; which implies that they also cognize self and a system in which both self and objects are included. The professional psychologists of the last generation took the line of discrediting the amateur, without being able to say at what stage in the evolution of intelligence consciousness of

self-and-object comes in. The most recent science however seems to be turning back to the unsophisticated view. The best observers now argue that the behaviour of the lowest active creatures cannot be explained by automatism, and that the movements of an amoeba pursuing a smaller amoeba imply cognition of an object.

Let this primitive cosmothetic synthesis be as rudimentary as we will, it makes a sufficient starting-point to enable us to regard the further process as continuous upward to the highest forms. From this beginning the rest is easy. The primitive synthesis develops both on its self-side and on its world-side with the growth of the mind. And the mental growth of animals involves advance of desire as much as of understanding. This connection of passion with understanding endures all through. Suppose that by a miracle a developed intelligence suddenly fell passionless, was moved by no desire, felt no pleasure or pain, hoped nothing, feared nothing, loved nothing, hated nothing. Would it not straightway tend towards extinction and dwindle like a flame deprived of air? It would surely go out, and, with it, its world.

§ 3. So much for the general desire of life. But general desire must particularize itself. An active creature must manifest its vitality in particular desires—desire of food, desire to escape

enemies and so forth. Let us see the result for cosmos-making.

Particular desires move us, on the self-side, to the formation of purposes. Our appetites prompt us to act upon objects, and purpose is needed for the guidance of action. Purpose is the beginning of personality. Externally it is manifested in purposive movement; the first function of purposes being to guide movement. A creature, such as the unborn child, which has no particular desires and makes no purposive movements, has no personality, but only the potentiality of it; and, if subsequently through some failure of development purpose never comes, the potentiality will never be actualized. It is characteristic of human development that all the earlier stages continue to exist underlying the later. The general desire of life remains all through; and so also, though developed personality is much more than purpose, it is possible to view the human mind even in its furthest development as an organization of purposive systems.

Now consider this cosmothetic stage on its world-side; to the formation of purposes corresponds the cognition of situations. Take as example some humble water-creature which being hungry seeks its food, or being attacked moves to escape. The object which it cognizes is, let us say, the appearance of the prey. From sensuous material which is given to it the intelligence of the creature

constructs a certain noetic synthesis to guide its movements; the appearance of the prey which corresponds objectively to the noetic synthesis I call a situation.

It is important to notice that in the order of mental development purpose and cognition of situation come before the recognition of distinct objects, that is, before the apprehension of persons and things. To a superficial observer the order is reversed. 'How,' he will ask, 'can we do purposes apart from objects wherewith to do them? If a man wants to write a letter he must find pen, ink and paper, all of which are distinct objects, before he can carry out his purpose.' But this, I would reply, is action at a stage long subsequent to that which we are now considering. These objects which the fully-developed agent works with, how did they come to be cognized? Surely, through purpose alone. Animals, and even men living under purely natural conditions, notice only those objects which they can use. Take the pen for example, is it not essentially a meeting-point of purposes? The writer notices his pen, rather than any object which is useless though of similar appearance, because of what he can do with it. A kitten can do very little with a pen except roll it across the floor to play with; a caterpillar can do nothing with a pen, at least nothing that would induce it to distinguish the pen from the circum-

jacent surface. The less we can do with the pen, the more it sinks away into the undifferentiated background of the objective world. The notion that objects are prior to purposes is parallel to the linguistic fallacy that words are prior to sentences, or to the logical fallacy that terms are prior to judgments.

We may conclude then that creatures of the lowest intelligence cannot be said to recognize objects, but rather to perceive objective systems or situations corresponding to the purposes whereby they seek satisfaction of their desires. There is no need to suppose that the caterpillar recognizes as distinct objects the eatable leaves on which it feeds, or the uneatable leaves over which it crawls. What we ought rather to say is that in the former case it perceives a situation favourable to its purpose of eating, and that in the latter case it fails to perceive such a situation; distinct objects are as yet beyond its ken.

These researches into the intelligence of caterpillars and suchlike elementary creatures may at the first glance appear abstruse and even uninteresting; and there would be good reason to doubt if they were worth pursuing in a book of this kind, if it were not true that much of human conduct, one might even say the main bulk of human conduct, is of a precisely similar character. I would illustrate my argument by the case of a man who



is three-parts asleep rousing himself on a cold night to pull some more bedclothes over him. This is an intelligent action involving the formation of a purpose and the perception of a situation together with the formation of an appropriate system of movements; but surely it does not involve recognition of the blankets or bed as distinct objects. Now an immense quantity of our conduct is like this, conduct which we speak of in vague terms as instinctive or automatic or mechanically habitual. It is a principle which previous pages of this book have laboured to defend that no human conduct is automatic, in the sense that a musical-box is automatic; while 'instinctive' is merely a term for cloaking ignorance. Very familiar movements such as walking, eating, speaking and writing cannot go on without some consciousness, but they do not need the full consciousness of the focus of attention. The consciousness which they require is like sub-consciousness, and yet is not wholly below the surface. This is a case where the metaphorical phrases 'surface' or 'threshold' are unsuitable and do harm. Consciousness is not like a room with a definite threshold separating inside from outside, nor yet like a pool with a definite surface separating what is above from what is below; it is more like a mountain with the topmost peak in bright illumination and shadows increasing down the sides to complete darkness at the bottom. The con-

sciousness which knows situations only is a half-way illumination.

Before proceeding further let me give this stage a name. Nomenclature is difficult because here we must either invent a new term (an unwelcome alternative), or use an old one in a new sense. This time the latter alternative seems preferable. I propose to call the cognition of situations 'perception'; and I shall keep the term throughout to distinguish this stage from the next succeeding, which I propose to call 'recognition.'

§ 4. Recognition of distinct objects comes later, and does not come before it is wanted. Let us see how the want arises. The earth-worm has very little occasion to cognize anything as a distinct object: it obtains its sustenance by ingesting earth at random; its mating is equally unselective; it devotes no care to offspring; it learns the approach of enemies only by tremors of the soil or by touch—neither being an experience which would disclose a distinct object. The only object which we can suppose it to cognize as distinct is its burrow. If we watch a worm which has lost its way crawling over the turf and trying burrow after burrow to find its home, we shall be inclined to think that the creature has in this case cognition of a distinct object.

In the next section I shall argue that this faculty of understanding is greatly strengthened by the

kind of passion which in the previous chapter I called affection; but it seems to begin previous to affection. A creature cognizes any object as distinct which is familiarly useful or harmful, and when therefore the creature gains advantage by recognizing it under varying conditions. A rabbit's burrow is useful to it and is distinctly recognized; a ferret is harmful, is recognized under all circumstances and always provokes from the rabbit the appropriate responses of fear and flight. The transition in intellectual development is from a stage of transitory situations which are objects of transitory appetite or aversion to a stage in which there are relatively permanent objects recognized as permanently advantageous or harmful. The creature, in other words, has attained a sense of utility, and the attainment is evidently a step in advance.

A creature is prompted to recognition by any sort of desire which can only be satisfied by some object recognized as identical amid diverse situations. Hunting is a great educative influence; so is mating. Most educative of all is the taking up of a settled way of life. A quite detached wandering creature has little occasion to cognize distinct objects, because there is no object which it regularly uses. All this is changed when it establishes itself in a home.

§ 5. If the foregoing speculation is true, recognition begins to appear before affection can be

discerned: we cannot credit an earth-worm with affections; at least, it gives no evidence of them. But recognitive power is enormously strengthened by the affections, especially the parental. When parental care begins, the home becomes much more important and complicated, and begins to contain useful and therefore recognizable objects; above all, it contains the offspring. A creature which casts forth its young to shift for themselves does not recognize them, but a creature which houses and protects its young must recognize them under changing circumstances. Where union between mates is enduring and conjugal affection arises, the faculty of recognition is extended accordingly.

The intellectual gain of ability to recognize a distinct object brings with it a corresponding gain of power. Power largely consists in foresight, and the creature which cognizes situations only has little foresight. It can foresee how a given situation is going to develop; it cannot foresee what is to be expected from the constituents of the situation taken separately. For example an earth-worm has no power to hunt, but a fox can hunt almost as cleverly as a man. So, moreover, a merely perceptual creature can have no tools, nor keep a stock of useful things; it can only use the things which happen to be there. This may be illustrated from the half-roused sleeper and the bedclothes. If the bedclothes are not close at hand, he must

wake more thoroughly and get on to a higher plane of understanding. He cannot get up while half-asleep and search for them. Still less can he while half-asleep foresee the coming of cold weather and lay blankets in stock.

The section which follows will deal with the cognition of individuals, which seems to me to be correlated with a higher kind of passion. Recognition as just defined falls short of the cognition of individuality. We can cognize objects as distinct without cognizing their individuality. This is our state of mind when we rouse up and search sleepily for a blanket; if two or three are lying about indistinguishable in warmth-giving quality, we pick up one or the other quite indifferent to its individuality. So also we behave towards pieces of money in buying and selling; one new shilling is just the same as another for every commercial purpose. We could no doubt distinguish them ('this is the very same shilling which my brother gave me'); but as a rule we have no motive. So also, to give an illustration which will be useful presently, kittens are indistinguishable to their mother: as distinct objects they are enormously important to her; as individuals they are nothing.

§ 6. This cognitive stage in the development of understanding is pre-eminently the stage of instinct. I do not say that instincts are impossible at the perceptual stage; but they must, owing to

AND PASSION

the transitory and relatively featureless nature of the objects dealt with, be of a rudimentary kind, such as instincts of food or flight or reproduction, leading to a uniform chain of actions. It is when distinct objects are cognized that we get the possibility of solid, complex and important mental structures, as are the instincts such as Mr McDougall describes them. The basis of instinct is a meaning combined (as all meanings are) with a certain habit of action. Thus one single object gives rise, as Mr Shand remarks, to a whole gamut of emotions.

In these considerations, we may notice incidentally, there seems to be the basis of a classification of instincts, having advantages over any now current. If we wish to enumerate the instincts possessed by any animal and to estimate their relative importance, we must think of the various distinct objects which its way of life makes it recognize—mate, offspring, prey and so forth. Thence also we get a classification of emotions. Instead of correlating one emotion to each instinct we shall consider the various ways in which the animal is called upon to act in relation to these interesting objects. No doubt there is one specially important mode of behaviour in relation to each object, as tender behaviour towards offspring; and this will be the emotion specially characteristic of that particular instinct. But there are also other

emotions specially connected with offspring, anger for one; as we know from the behaviour of the lioness robbed of her cubs. And this is perfectly intelligible, if we reflect that the meaning of 'cub' in the mind of the lioness is the basis of the whole parental instinct which she displays.

These considerations also seem to settle the question whether man is to any degree a creature of instincts. In the next section a distinction will be drawn between recognition of distinct objects and recognition of individuals; and reasons will be shown for thinking that recognition of individuals is a more advanced stage, and that conduct based on it modifies the earlier kind of conduct based on recognition of distinct objects. But, though the earlier form of conduct has been overlain and greatly modified, it is still there. We have by psychic inheritance a great store of noetic syntheses concerned with those objects which are specially interesting to us in common with the higher animals. And by these syntheses in the rough and in the main our conduct is determined. We marry instinctively and treat our offspring in an instinctive way; though in detail our conduct is infinitely varied by our apprehension of individuality.

§ 7. My exposition has now proceeded far enough to enable me to pause and justify further the term 'cosmothesis' by explaining more pre-

cisely what I mean by 'self' and 'world.' Self evidently means an organization, a systematic arrangement of mental factors. But there is in the psyche something more than that; there must be a central spring or source of energy by which the organization of the self has been shaped. The relation of the organized self to the central source cannot be understood by any sort of material analogy or illustration. We must not for example liken the organization to a machine with an energy, which is not part of the machine, driving it onwards. Here, as in the philosophy of the human spirit generally, we must get rid of all material and mechanical forms of thinking. There is an energy and there is an organization which is formed by and expresses the energy, and conditions the energy; but does not take away from it all its freedom. All this is well exemplified in the moral sphere. The moral law, as each man realizes it, is formed by the moral consciousness, expresses the moral consciousness and conditions it; but is liable to be modified by the energy which formed it. 'Soul' is a term which may stand for the organized self and the central upwelling energy taken together.

Now consider the self in the sense of the enduring organization; of what does the organization consist? In part it is noetic, in part passional. The passional part consists of ways or habits of



desiring certain objects or kinds of objects, and of shunning certain objects; habits of liking or disliking certain persons or things; and, to anticipate the purport of sections which follow, habits of loving or hating certain individuals, and habits of taking interest in certain totalities. The noetic part is exactly parallel to the passional part and is essentially bound up with it. As desiring or shunning, liking or disliking, hating or loving and taking an interest in objects, the agent must so far understand those objects; he must possess noetic syntheses corresponding to his passional habits. And both passional habits and noetic syntheses are part of the very substance of the self. Take them away and the self is radically changed.

This, by the way, enables us to answer the question in what sense and to what degree knowledge is part of the self. We feel that much of what we know might be lost and yet our self not be greatly impaired. But that is knowledge to which no important passional system corresponds. Knowledge which is bound up with an important passional system is part of the self, and when it goes the self is impaired. In disease or in extreme old age men sometimes fail to recognize clearly their nearest relatives, and so far are no longer their full selves.

Now for the explanation of 'world.' There is external to us an energy or system of energies

with which our souls interact. This energy has its own ultimately real nature and its own ultimately real arrangement, a nature and arrangement of which we have no direct knowledge. Our world is not to be identified with the ultimately real. It consists of relatively permanent mental systems existing in the agent soul which correspond to the ultimately real with accuracy sufficient to enable him to conduct his behaviour successfully. This world is sustained by the agent; and when he dies it disappears; though, of course, the ultimately real still goes on.

In all these world-constructive systems there is passion; much in some, not much in others. The systems which correspond to our deepest needs and most potent sentiments have great passional value and are prized accordingly; that part of the world which for us is mainly an affair of understanding (as our knowledge of the Dalai Lama) is but slightly interfused with passion. This agrees with the modern psychological doctrine of the interdependence of self and world; a man's self and his world grow together, and flourish or wane together. When the self is greatly impaired, as by bodily mutilation, such as blindness, great parts of our world fall away from us. And when our world is seriously injured, as by earthquake or war or social disaster, the self is injured likewise; so much perhaps that the agent cannot keep his

sanity or maintain his interest in life. A poor self implies a poor world; a rich self a rich world.

§ 8. To resume the main thread of this exposition. We had progressed so far in the account of cosmothesis as the stage of cognizing distinct objects. The next stage is the cognition of individuals. With this advance in understanding is correlated an advance in passion. The regard which we entertain for objects which are distinct but not yet individual is different from and lower than our regard for individuals; this latter I propose to call personal affection, as opposed to the instinctive affection of the creature who cannot do more than recognize distinct objects.

The feeling of the human mother for her child is evidently beyond that of the cat-mother for the kitten. We may illustrate the difference by comparing the behaviour of children of different ages towards their toys. A very young child will take much interest in his rattle and will strongly resent being deprived of it, but he will not recognize it as individual. If he loses it he will be consoled by another rattle of similar appearance. On the other hand a girl somewhat older will regard a favourite doll as an individual, will even adhere to it with affection when it has been so battered as to be almost unrecognizable ('still the prettiest doll in the world'), and will refuse to be consoled by a substitute of much smarter appearance. In short we

may say that the little boy loves his rattle as a distinct object, while the little girl loves her doll as a person.

It seems probable that the cognition of individuality arose by degrees. We ought to look for its beginning, I believe, in parentage. Where a number of young ones are produced at a birth and treated all in the same way, there is no occasion to recognize individuality. A cat with five kittens needs and exercises no distinction of the kittens as individuals, still less does a hen with twelve or fourteen chicks. The case is somewhat altered when a mother has under her care two or more offspring which are of different ages and therefore require each a different treatment. But even this alone is only a step towards cognition of individuality. Suppose a wholly imaginary case, that of a creature like a cat tending simultaneously two young ones of widely different age. Such an animal would recognize them as individuals only as contrasted with each other; we could without difficulty replace one of the young ones by another of similar size. What makes the full cognition of individuality is that the young one should recognize the parent as distinct, should understand that it is being treated differently from any other creature, and modify its own behaviour accordingly. *Risu cognoscere matrem* is a great step in human infancy; for as soon as it is achieved the mother can no longer be put off with a changeling.

It is because the main condition of the recognition of individuality occurs only in the human family that we have little evidence for the faculty below the human level. It may appear in the behaviour of the animal mother to a solitary young one, or in the behaviour of mates among the animals which form lasting unions, or in the familiar example of the attachment of the dog to his master; but it is difficult to affirm with perfect certainty.

But whether this be so or not, it is the common opinion that personal affection is appropriate to relationship between human agents, who are capable of reciprocity of affection. To treat a person merely as useful or even to prize him in the way that we prize a 'distinct object' is to ignore his human claim. Such is the typical treatment of the slave. The slave, according to the well-known Aristotelian phrase, is an "animated tool," who is not supposed to have any community of thought or sentiment with his master. The mischief of slavery is that it creates and perpetuates by custom and prejudice a needless estrangement between classes of men.

Just as the opposites of appetite and affection (whatever their names may be) are to some degree co-ordinate with appetite and affection in causing us to cognize distinct objects, so the opposite of affection, which is hate, causes us in some degree to cognize individuals. We can feel fear or disgust

towards something which is no more than a distinct object, but we can feel hate only to an object which is regarded as individual. But, of course, hate is much less important than love in cosmogenesis. Here we come upon an example of a general principle. In the earlier stages of passion and understanding, pains and wants and repulsions count for more; in the higher stages, pleasures, satisfactions and attractions. There is an obvious reason for this. In the earlier stages, where appetite is paramount, satisfaction is short; but pain enduring and strong: in the higher stages satisfaction counts for more than frustration. In particular, hate is a sentiment prompting to a line of conduct which results in its own extinction; it drives us away from the object or prompts us to destroy the object. In either case hate ceases to exist; whereas love seeks its own continuance.

Before going forward we may pause to notice one or two corollaries of the foregoing theory. One is that the recognition of individuality must have begun with persons and afterwards extended to things: in other words, the category of thinghood is a weakened form of the category of personality. There are many familiar facts in support of this. Children, for example, have good apprehension of individuality in persons but weak apprehensions of it in things, a characteristic appearing incidentally in their propensity to destroy articles which

elders value. The objects which they value most are toys, such as dolls, which they personalize more or less. Among grown-up people, too, individuality is attributed specially to things which are closely connected with persons, such as books, pictures, furniture and other objects of human use; they are things round which a psychic element clings, so to speak. But it requires a mental effort to grasp the thought that every pebble on the British coast may be regarded as having some degree of individuality.

Another point worthy of notice is that there is no opposition, such as is superficially supposed, between individuality and sociality. The basis of every person's individuality consists in his distinctive affections and valuations, and these are only possible through society. A man is not made individual by desiring meat and drink and so forth—there is nothing distinctive in that—but because he has certain well-marked feelings of regard for persons and things. The full development of individuality is only possible through corporate affections, to be mentioned later; but it begins with personal affection.

§ 9. Let us now move onward to a further stage. It goes without proof that we can cognize individuals without reference to any corporate body: a child may treat his mother or nurse merely as an individual; and it is as individuals that grown

people regard pet animals which are incapable of social organization. But it is characteristic of the human mind that it can cognize individuals as members of a corporate body, and view the aggregate of individuals as having the same kind of unity and permanence that we ascribe to an individual. This is prompted by an extension of personal affection, which I would term 'corporate affection.' In virtue of our corporate affections we take interest in corporate bodies, such as families, tribes, nations and all kinds of civil and military organizations.

It is favourable regard which first prompts us to cognize corporations, just as it is love which prompts us to cognize individuals. The earliest form of human organization is the family, and the primary motive to recognizing the unity of the family is the desire to promote its welfare. By far the greater part of the human organizations which we recognize are brought within our ken by kindly motives. Some are recognized because they are hated, as the police-force by the burglar, but that is exceptional.

It is in virtue of our power to cognize corporations of men that we are able to proceed to cognize classes—classes of men as soldiers and priests, classes of animals, and classes of things. A class is never regarded naturally as a mere aggregate, that is, as a lot of things with some uniform label



on them; but rather as a systematic totality. Classes in which we are really interested are regarded as quasi-corporate bodies and enjoy an analogous sentiment. The ornithologist regards the race of birds as having definite limits and a common character, and 'loves birds' with a sentiment which can only be explained when we trace it to its roots in the family and tribe. Even in the natural sciences which deal with inanimate substances we can trace the same principles in a modified form. The enthusiastic chemist does not 'love' chemical substances quite as the ornithologist loves birds; but his interest in them does certainly show an affectionate tinge. Savages and children classify little, because they are wanting not only in noetic grasp but also in passion.

Thus there is a close connection between width of sentiment and width of generalizing power. There are deep moral causes to account for the fact that some nations as a whole and some classes of men as a whole take very little interest in science; and that some men are indifferent to science who seem to enjoy every advantage for it. We could not go so far as to assert that the two things are inseparable; there are some sciences, such as mathematics and physics, whose objects are not definite totalities and cannot easily be regarded with sentiment. And even in sciences where sentiment is easier we find many examples of cold-hearted

people with much width of intellectual outlook; but this is the common case of a faculty arising in certain conditions and then surviving in precarious existence when those conditions have ceased. The general rule is that in science passion and understanding arise together and reinforce each other.

When men grow old and their intellectual powers fail, their sympathies contract; and when they get selfish and self-centred, they get stupid also.

§ 10. When a mind has come under the influence of corporate affection it is soon led on to that highest development of passion which in the previous chapter I called valuation. Valuation is the estimation, passionately and intellectually, of the relative value of the components of a totality. In a family, for example, every intelligent member who is interested in the welfare of the family soon learns to distinguish his fellow-members as being more or less important in relation to the family. From the child's point of view the work of the mother is by far the most important, and this, apart from purely instinctive affection, is the cause of the great sentiment of maternal reverence.

It is worth while to pause for a moment and consider the reaction of these corporate sentiments upon the personal affections from which they arise. Every social advance makes personal affection clearer and stronger. When we learn to classify people the classification makes a difference to our

understanding of the people classified; we actually know more about A when we make clear his affinities with B, C and D. So also our valuation of a man lends a great enhancement to our understanding of his character. Personal affection is still the basis; but, without intelligent valuation, it may be foolish and even mischievous, as in the doting of a mother who 'spoils' her only boy. It is because of our faculty of valuation that we are always forming estimates of men, both the men whom we know and the men who are public characters and live in the public eye. We weigh them up in reference to their value as co-operators in the institutions to which we belong. Persons who live reclusive lives have very little power of judging character.

For the same reason that we value others we also learn to value ourselves; a man is induced to set diverse values upon various components of his own character according as they contribute to the corporate interests to which he has attached himself. It is also the rational basis of self-respect and of self-depreciation. A man may have the sense that he is of great value, or of moderate value, or of small value, and bear himself accordingly so as to gain the approval of those who know him. But he cannot do this unless he understands and values the corporate bodies to which he belongs, and is able to appraise his own position in them. Thus

we see that the sentiment of valuation is the motive to that function of understanding which we call self-consciousness. The essence of self-consciousness is the survey of oneself from an imaginary point outside, and there is need for this only in society; a solitary man has no self-consciousness.

There is no limit, short of the universe, to the width of the totalities in which we can take interest, and every such totality-interest helps us to deeper understanding of the individuals composing the totality. A wide range of corporate sentiments is necessary to an orderly and penetrating judgment both of the world at large and of the persons, things, institutions and events comprised in it. Here comes in the cosmothetic function of philosophy, or perhaps we might say, of the passion which is the motive force of philosophy. For philosophy consists on the passionate side in a sentiment for the widest totalities, and on the intellectual side in the understanding of the widest totalities.

But this, it may be said, makes the philosopher too optimistic, too much a lover of the universe. There have been pessimistic philosophers. Well, I admit that pessimism is a difficulty; but not, I think, a fatal difficulty. Pessimism is partly a pose, which can usually be convicted of inconsistency by cross-examination; partly it is a superficial feeling which does not penetrate to the lowest strata of consciousness. But really my argument

does not compel me to explain away pessimism and the cosmic indifference which is next door to it. My argument, put shortly, is that cosmothesis begins in desire and grows to full stature by love. But this is not necessarily true of every individual who has a consciousness of the universe. The intellect in its highest ranges is half-independent of the passions. We could not say more than that the man of intellectual power who has turned against the world has cut himself off from the deepest sources of strength and is running a danger of intellectual atrophy and dissolution.

Far-reaching valuation in its double aspect of sentiment and understanding is the highest part of man and that in which he feels most definitely his superiority to the lower creatures around him. It has been felt by thinkers of all ages that there is something in our nature which puts us in a position decisively superior and would make us unwilling to exchange a human lot, however unfortunate, for a lower kind of life. Plato and Aristotle had this feeling very strongly. If they had been asked to name this superior element, we know they would have answered "logos," or reason. But reason, unless we read more into the term than the Greeks ever meant, is surely a cold and bloodless affair. The person who merely reasons about human life is not the one who values it most. The enthusiasm of the old Greek sages for "logos" was

AND PASSION

passionate, not merely reasonable; their practice was better than their naming. Action and the passion which generates and is generated by action are indispensable to appreciate fully the dignity of life and of the world which is the embodiment of reason.

## CHAPTER IX

### THE GENERAL RELATION OF PASSION TO UNDERSTANDING

§ 1. Now that we have seen how passion works with understanding, it is possible to state the general character of the relation between them. For purposes of exposition it may sometimes be convenient to treat them as distinct though interacting principles—passion supplies energy to understanding; but deeper study will recognize a closer implication.

We touch the root of the matter by observing that passion in all its kinds and stages has intrinsic quality or suchness. This may not be obvious at the first glance. Someone may maintain against me that passion has quality in reference to its object; but no intrinsic quality of its own: because desire for sleep, for example, can only be described by the qualifying words 'for sleep,' that is, by reference to the object of the desire. This is fallacious. It may be true that we can only describe a desire by reference to its object; but we may feel none the less that it has a quality of its own. Desire for

sleep is one thing and desire for food another; they do not differ merely as sleep differs from food. If they did, we should be puzzled how to compare them; for sleep and food are such utterly different objects that no one ever thinks of bringing them directly into comparison. The difference of the two desires is a difference of direct experience; correlated doubtless with difference in the bodily structures which are involved respectively.

Some further consideration will make this plain beyond dispute. If desire has no intrinsic quality it must be featureless. Now consider the case of a man who is hungry but sees no food anywhere. If his desire were really featureless he could not recognize the desire as hunger, and would not know what to do to get satisfaction; in other words, he could not set about looking for food. Even when food is present the same argument holds: for the agent has to select the food from the environment; and, if the desire had not its own character, there would be nothing to guide his selection.

Perhaps the most striking cases of this kind are those in which the agent cannot have had any experience to guide him. Consider the new-born infant prompted by hunger to feel for the breast and perform the actions of sucking. I do not think this can be explained physiologically, any more than other cases of bodily habit or dexterity;



but, if the explanation is to be psychological, we must suppose that the desire of hunger is congenitally associated with the experiences necessary to satisfy it. And this evidently implies intrinsic quality in the desire. Moreover, since each kind of passion has intrinsic quality, we can experience passional combinations which have arrangement in the same way as objects which are apprehended noetically.

It is natural that we should not be able to describe the intrinsic quality or arrangement of passion except in the most general way, as by saying 'I am hungry,' or 'hungry and angry.' Description is only needed for co-operative action, and what we co-operate about are objects which we apprehend through sensation. But, as we have seen in regard to noesis, there is such a thing as cognition which is not articulate or capable of expression.

I believe that recognition of the intrinsic quality and arrangement of passion is supremely important for the theory of art. Art notoriously has to do with passion—desire, affection, valuation and their kinds and combinations manifest themselves in all the arts; especially is this plain in very primitive arts, such as dancing. It is undoubted that such arts awaken passion in the spectators or auditors, and therefore the artists themselves must have had passional experience. The fact seems to be that certain combinations of movements, sounds, colours

and shapes have affinity for our various kinds of passion, and that certain gifted persons who have experienced the various kinds of passion are able to express them appropriately in artistic forms.

In the light of these facts I will suggest a solution to the problem of the present chapter. In souls which experience passion there is from the first an awareness of the quality or suchness of the passion; I use the term 'suchness' to include quantitative as well as qualitative character. To put the matter into other words, passion itself has from the first a character which is necessary to its existence as passion, but is not passionate. In the further development of passion, this implicit element disengages itself and becomes distinctly recognizable as understanding.

Recognition of the quality of desire enables us to go back to the furthest point in speculating upon the beginnings of consciousness. There are biological forms which are recognized to have life but yet no capacity for purposive motion; such also must be the embryonic condition of higher creatures. These lowly creatures, however, must desire to live; for they evidently resist destruction. Their desire of life must be almost characterless; it can only have the quality of being desire of life, as opposed to desire of death: yet even this is enough to explain the beginning of movement; for the lowliest creature will move to avoid attacks which imme-

diately involve destruction. This, I suppose, is how definite movement began ; it consisted in efforts to evade pain. The pain of mortal injury is the earliest and most fundamental sense-experience of organic creatures. Next to it comes the pain of hunger which has almost the same significance as a menace to life.

We need not stop to inquire how the indefinite movement to avoid pain or the random movement for food becomes definite and purposive. But, as soon as movement does become definite, desire begins to define itself by reference to the objects of the desire ; its quality ceases to be purely subjective as heretofore. The general sense of hunger becomes appetite for some particular kind of food or for some particular piece of food which can be reached by movement. And when objective reference appears the element of understanding is clearly discernible.

These earliest stages of life may seem so remote and problematical as not to be suitable matters for the student of mental science. But in reality analogous mental conditions occur daily in our own experience. Every appetite, indeed every want of every grade, begins as a subjective longing and then defines itself objectively as it begins to progress towards attainment. Consider some want which is not sensuous at all, the desire for a distinguished career which we call ambition, or the

desire of wealth; they both begin as a subjective uneasiness which subsequently becomes more definite. The uneasiness must from the first have its characteristic quality; otherwise it could not impel the agent in the direction where satisfaction is to be obtained.

§ 2. On the plane of appetite understanding is already distinctly discernible, but is still most intimately involved with passion. That is because of the nature of the objects of appetite; they are transitory combinations which, so far as the agent is concerned, fall to pieces at once when appetite is satisfied. While appetite is still unsatisfied it is vitally important for the agent to cognize the arrangement of the objects desired, and his cognition is keen and effective; but it ceases with fruition.

A change comes when the agent rises to the plane of affection; and still more when he rises to reciprocal affection. The objects of this kind of passion have a permanent interest and are therefore permanently interesting objects of study. The passionate feeling of the agent is no longer transient but an enduring, well-organized sentiment. To the agent who feels affection, all the important movements of the object of affection are interesting; and so are all influences which affect the object in important ways. As not all these movements and influences can be accurately foreseen, it behoves the agent to study the object and its environment

generally without any immediate thought of practical action. Thus there comes to pass a disengagement of understanding; the agent exercises cognition when he is not at the moment under the influence of passion. I have shown previously how the desire of life leads by its own development to the stage of affection; the development of passion necessitates a development and disengagement of understanding. But the disengagement is never a clear separation; no less than before passion remains the root of intellectual interest.

There is no need to follow out the matter at length in the further stage. In valuation we have still a passional interest in objects; but it is an interest which may not be immediate, and always involves a wide surrounding circle. The wider the circle of valuation, the more impossible it is to predict exactly how the object will affect our interests, and therefore to say exactly what we need to know about it. The tendency therefore is to learn as much about it as possible, and welcome every new piece of knowledge as a contribution which will doubtless find its proper place. A simple example is the attitude of an earnest parson to the fabric of his parish church; his sentiment towards the fabric will impel him to take an interest in its history and to learn all he can about it, apart from the utility of the information.

I do not propose to go into full explanation of  
OF PASSION TO UNDERSTANDING

the causes why men exert themselves to learn about things which apparently have no passional interest at all. Sometimes the passion is there, but remote and indirect, as with the lore of the antiquary; sometimes the passion belongs mainly to the subconscious strata of the mind. But we must also recognize that there exists in some minds (and these not the worst) a real love of useless knowledge; just as physically strong men love useless bodily exercise. Subtle and vigorous intellects enjoy trying their strength on hard problems, just for the sake of overcoming difficulties quite beyond the average man. This is part of the explanation of 'useless knowledge,' and the other part is a recognition of the social mind. Some minds, who are doing work which seems outside the sphere of their natural interests, are really working under the control of a social mind to which these things are truly valuable.

The argument may be summed up briefly. In the beginning passion and understanding are absolutely merged together: passion is predominant; but in the totality of which it is part there is always the qualitative element, which later is distinctly recognizable as understanding. The development of passion necessarily brings the agent into relation with the objective world; and then understanding begins to disengage itself and is clearly discernible. The normal and natural development of soul-life

brings to pass a further disengagement; but not a clear separation.

§ 3. We are now able to see fully why understanding is total-working. All desire is from its nature total-working. For in desire we are aiming at something in which we expect satisfaction, and therefore include in our desire everything which is recognized as necessary to the satisfaction. This fact is the more apparent the simpler the example that we take. A hungry child who sees a piece of food upon a table includes in his desire all that is necessary to enjoy the food—seizing it, carrying it to his mouth and so forth. A simple creature's life consists of such pulses of desire, and each pulse includes the requisite totality of thought and action. In appetitive acts the passional and intellectual aspects are most intimately conjoined. And thus an understanding which was not total-working would be useless for the service of appetite.

In the higher walks of understanding the implication of passion with understanding is specially important. A work of art, so far as it has merit, must be the expression of some unitary need, some single desire of the soul. Because of this singleness of desire the plan of the work is comprehensive and made at one stroke by the artist. It is necessary for the carrying out of the work that desire and plan should be continually present to his mind; not in full consciousness of course, but certainly

below the surface: for only thus can the details of the work be brought into harmony with the whole.

These facts are pressed home upon us if we consider the causes of failure in art. I would argue that these causes are passional no less than intellectual. To form a great and worthy artistic scheme the artist must be full of strong and enduring desire. A mind which has not this glowing force may apprehend and criticize to some extent; but it will not create. Such efforts at creation as it may make will be lamentably frigid and second-hand.



## CHAPTER X

### THE FUNCTIONS OF UNDERSTANDING

§ 1. I wish now to illustrate my topic by considering the work of understanding from another point of view. Let us think of the objective world as constructed, and of the individual as confronting it. In order to live his life and work his will in the world the agent exercises functions of understanding. The main functions I would enumerate as follows: purpose, schematism, individual conception, abstraction, class-conception, generalization, analysis and universal conception. The exact meaning of these terms will be explained presently, so far as they do not explain themselves. The aim of the chapter is to show that the intellectual functions signified by the terms are noetic, and that passion has a share in them; a share which is greatest in those which are the most elementary and fundamental.

In the chapter on 'cosmothesis' my point of view was to regard understanding as constructing its world; the present chapter treats the world as constructed. This mode of exposition can be defended only upon grounds of expediency. Cosmo-

thesis is not a process finished once for all, as one finishes a house. The soul is making its world continually, as a snail makes its shell; every time we exercise intelligent function we do cosmotheizing. But for expository purposes we have to make a separation. In all exposition of mental facts we must in some degree distort the facts; for we must expound according to some spatial scheme—as house-building and the like—which is really alien to the nature of understanding. If we expounded understanding according to its own nature we could not hope to make our meaning clear.

§ 2. The primary function of our understanding is purpose; and it remains the most important to the end. Man is essentially a purposive, prospective being: with the necessary intervals of repose he is incessantly working; and work implies purpose. When purpose ceases, when, in other words, we cease to regulate conduct by foresight, we sink to the level of babes or idiots. Some of our purposes are great enveloping purposes, such as the pursuit of a profession; others are minor purposes, subordinate to the great purposes, or more or less independent.

Though purpose is so important it may be treated briefly; since it exhibits plainly the points for which I am arguing. Purpose is evidently noetic; any example will show this, the commoner the better. Take the cooking of a dinner. The

mind of the cook when she begins to prepare grasps the business as a whole. She probably does not say explicitly 'I must prepare dinner'; she may not even think the thought explicitly. Her mind simply throws itself into the dinner-preparing attitude; but that implies the whole formula of preparation which governs for the next hour or two her behaviour to enviroing circumstance. Synopsis is another noetic character, and purpose is evidently synoptic; the cook's eagle eye surveys with a glance the whole culinary field. And purpose is coactive: the cook assembles mentally the requisite details; she does not just let the ideas trickle into her mind: most of the needful thoughts doubtless come without conscious summoning; but she will want some active thinking to supplement them—'Have I got the parsley and sage?—What about the apples for the sauce?'

And of all the functions of our understanding purpose is most evidently infused with passion. Passionless purposes are never met in real life, and seldom even in the stranger flights of modern fiction. Even with the most intellectual men the vast majority of their purposes are prompted by the more elementary motives of desire.

§ 3. Schematism is a term which calls for some explanation. It means the function of forming schemas; schemas being the subjective correlates of situations and distinct objects. Our ability to

perceive situations and to recognize distinct objects depends upon our possessing schemas in conformity with which we interpret the information obtained through the senses. The following quotation from Professor Stout explains what I mean. His terminology is different from mine; for he uses the term 'thing' where I should say 'situation' or 'distinct object.' The passage is from his account of what he calls Complex Perception (*An Psych.* II, ch. v, § 5):

"Complex perception," *i.e.* the perception of things such as apples and books, "as it ordinarily takes place, is possible only through schematic apprehension. If one part of the complex whole be given, we have such a prenotation or schematic anticipation of the remainder as enables us to mentally inquire for it, and if circumstances permit, to seek for it in detail by actually touching, tasting, seeing, etc., or to call up the corresponding ideas in succession. This mental prospectiveness constitutes the possibility and controls the order of a series of actual percepts or ideal revivals, but it does not, at the outset, already contain these ideas and percepts. It is not their sum, but their noetic synthesis."

And he supplements this by pointing out that in apprehending a more or less familiar sensible thing we apprehend parts which are not actually perceived and may be inaccessible to perception.

"In looking at a thing, such as an apple or a book, I only see that aspect of it which is turned towards the eye; the other side is invisible. But when I perceive an apple, as such, I certainly identify it as having spherical shape."

This latter quotation illustrates the coactive aspect of the function.

The importance of the preformed schema in perception has been illustrated admirably by the study of illusions, which are often caused by the presence in the mind of the patient of a mistaken schema warping his apprehension of the objects which are actually present. For example a nervous youth walking alone at night past a copse with a shallow pond in the middle encounters a will-o'-the-wisp on the surface of the pond, and straightway fancies that he sees an encampment of gypsies lying round a fire. By the aid of hypnotism the matter can be investigated experimentally. Various preformed schemas are suggested by the operator to the patient, who then has the desired illusion. These illusions are not pure imaginations, but have a greater or smaller basis of actual perception. I have already mentioned a common kind of visual illusion where the patient is shown a card, which though blank necessarily has markings upon it, is told that it is a certain kind of picture and straightway sees the picture. This shows what goes on in the normal healthy mind. When we wake in the morning and, looking round the bedroom, are able to recognize each familiar object in it, that is because our mind is stored with schemas by virtue of which we apprehend each object at a glance and supply mentally what is wanting in the actual report of the senses.

It is easy to see that there is passion behind

this schematizing function. Why do we detach a situation from its temporal and spatial context and think of it as one, going so far sometimes as to call it 'thing'—'a strange thing happened to me yesterday'? Why do we treat a distinct object as distinct? The point is raised by the familiar psychological question, 'What is a thing?'; to which the answer is : 'Any object which has unity and continuity of interest.' Thus an object may or may not be a thing according to the agent's standpoint. A heap of pebbles may be one thing—if you fall over it in the dark; it may be many things—if you are looking for a missile to throw at a dog. It is passion which makes you form the schema and passion which makes you apply it.

§ 4. Proceed now to the function which I have called individual conception; I mean forming a conception of an individual. This also is noetic and has a passional side. Many, perhaps most, of the great logical controversies have been about conception. At present I will merely state my own opinion. Conception I regard as being in the first instance a function appropriate to the cognition of personal individuals. Its noetic character may be illustrated by another quotation from Professor Stout :

"Conception, he says (*Dictionary of Philosophy, s.v.*), is cognition of a universal as distinguished from the particulars which it unifies. . . . The individual marked by a proper name

is a universal. Any individual man, John Jones or Richard Roe, is the unity of manifold states, qualities, and relations. He remains the same man whether he is eating or sleeping, sitting or standing, struggling or triumphant. The proper name marks the connecting unity as distinguished from the multiform ways in which it is particularized."

We may verify all this by considering our attitude to the individuals whom we know; each one is represented in our minds by a sort of formula according to which we regulate our conduct. The Skipper is "complimentary, energetic, persevering, skittish"; the Lecturer is "brainy, handsome, slim and slender, witty, entertaining, coy." Such conceptions have only a relative permanence; we change them greatly as we progress from youth to middle-age, or get opportunity of deepening a superficial acquaintance with men.

Where interest is strong the concept is extensive and definite, and regulates our conduct accurately and subtly. Consider the knowledge which a mother has of her daughter, and compare it with cases where interest is feebler. Somewhere in William James there are amusing remarks on the changing attitude of the University teacher to his class as he grows old in harness. "The young girls who, when he was young, breathed for him an aura of infinity are now scarcely distinguishable existences."

In most of our personal conceptions the element of passion is too plain to need argument. But it

is less plain in regard to persons whom we know slightly; and still less plain in regard to things for which we have little use. Here arises the possibility of pure curiosity, a feature of character which is dignified and useful in proportion as it is connected with some of the serious interests of humanity.

§ 5. We understand abstraction best as arising from analysis of the individual concept. In its simplest form it is the apprehension of aspects or qualities of an individual. We abstract by means of comparison. The child, who knows no mother but his own, will recognize her kindness, or strength, or cleverness, but will recognize them concretely as integral parts of his concept of her; but, when he becomes acquainted with other mothers who are neither kind nor strong, nor clever, he is enabled to view these qualities abstractly.

The primary motive to the formation of abstractions is, I believe, to be found once more in family life. A parent must notice the characters of his children in order that he may correct them—'Tommy, don't be so unkind to your little sister.' Because they have not the human motive, brutes, as Locke remarked, "compare but imperfectly." Abstraction is evidently noetic: an infinite variety of acts is comprehended under the term 'unkind'; its meaning is nothing particular, but a formula like that of a curve, though less precise. And abstraction is no less plainly passional. We direct



attention upon aspects of character which interest us; aspects which we wish to encourage by praise or discourage by blame, aspects which we think other people will like to hear about as we ourselves like to know them.

§ 6. Concepts may be formed not of individuals only, but of classes. To understand how we get the faculty of cognizing classes we must clear our minds of the fallacies encouraged by the mechanical tradition in logic. According to that tradition one class is just as good as another; all that is needful is that individuals should have some common mark, however superficial—men who part their hair in the middle, men whose names begin with B and so on. We can indeed make such classes, but they are highly artificial. A natural class consists of individuals possessing such a common character that we observe a uniform conduct towards them in some important particular. The first-recognized classes are the individuals who form the important social organizations, the family and the tribe. In the human family the members—father, mother and children of various ages—have great individual differences; but they have this most important common character, that they belong to the family, and are thereby sharply distinguished in the mind of each member from all who stand outside the family circle. And similarly with the tribe.

We must be careful not to place the faculty of

classification too early in the development of understanding. It might perhaps be thought that, as a rabbit recognizes a man or a weasel under varying circumstances and behaves in a uniform manner, therefore rabbits recognize men and weasels as classes, and have concepts of those classes. This I should dispute. The point is whether the rabbit thinks of men and weasels as totalities; for that, I hold, is the distinguishing differentia of a class. There is no reason to think that the rabbit has any power of mental synthesis so extensive as this. It is well known that savage men have a narrow range of classifying power. Among the lowest languages there are names for different species of trees, but none for tree in general; names for various sorts of tails, bird's-tail, dog's-tail, monkey's-tail, but no name for tail. On the other hand language shows plainly that this wide synoptic range is enjoyed by civilized men. To us weasels form a totality which we can think of in the same kind of way that a savage thinks of his tribe.

In the field of science the class-concept is specially important; and when in Greece the first endeavours were made to give a reasoned account of science, the idealists made it the foundation of their theory. And all through the history of philosophy the obviously spiritual, or at least non-sensational, character of the class-concept has caused idealists to put it in the forefront of their

doctrine. Plato was so anxious to vindicate its ideality that he put it outside of human nature altogether in a separate super-sensuous sphere. By doing this he made his concepts, beside other inconveniences, utterly rigid and unadaptable. His mistake has endured long and is still the most dangerous that besets the theory of conception. It was greatly encouraged by the ancient notion that natural kinds are immutable; since Darwin refuted this there is less excuse for the rigid concept.

The concept is plastic; but, of course, it is not infinitely plastic. Objective things have their own character; and though we can treat them in many various ways and therefore form indefinitely varying concepts of them, we cannot do just what we like with them. Thus there are two factors to the making of the concept, the objective and the subjective. Our concept of the class 'tree' depends partly on what trees really are, partly on what we propose to do with them. The plasticity of the concept is evidently greatest in the case of artificial objects. The concept of table, for example, varies as widely as the sorts of tables which can be made and the uses for which they can be employed.

The other mistake, which is connected with Plato, is the substantive existence of concepts. Against this it is only necessary to recall the arguments in a preceding chapter against the substantive existence of ideas. Concepts have no

substantive existence; they are noetic syntheses which have a continued existence only as modifications of the agent soul.

§ 7. Generalization I understand to be the statement of aspects or abstract characters of a corporate totality or class. Thus while the statement 'Jones is always good-tempered' is abstract, 'All men are mortal' is not only abstract, but also general; because it is predicated of a class.

The faculty of generalization, like that of conception, is passional in its beginning. The first generalizations were statements of family and tribal customs, such as the elaborate rules of marriage current among Australian tribes. The very early generalizations which constitute savage magic and superstition are statements about classes of imaginary beings regarded as hostile or friendly to man.

In the section of the previous chapter dealing with the cognition of classes it was shown how the power of class-conception arose; it is through our knowledge of the human family and tribe that we are enabled to cognize those 'families' and genera of living things, creatures of earth, air and sea, which are the subject-matter of natural science. But in their further scientific extension class-conception and generalization get far away from their passional basis. For the purposes of science the scientific man must often deal with classes which have no emotional value for him.

§ 8. Analysis is separating the elements of a complex system so as to apportion to each its proper value and meaning. It is a very important function of understanding, though not quite so important as some suppose. All learned or academic persons have a tendency to overrate analysis, because it is specially the business of the critic and the teacher. In reality synthesis is more important, the work of the planner and creator who makes the system. Construction is better than reconstruction.

It is easy to discern the origin of analysis in the needs of human society. Analysis is essential to the management of an organization of men. It consists in distinguishing the factors which contribute to a total result, and estimating the value of each contribution. In a family things may be going either ill or well, and there may be a general sense that this is so; but some analytic power is needed to pick out the causes and assign responsibility to the various persons concerned. Here we may see the reason why analysis comes after synthesis. When once we have the notion of a totality consisting of a number of parts, we can proceed to analyze the totality and to evaluate the parts. But we must first have the power of grasping such a totality, and till corporate sentiment arises there is no motive to grasping. When once we have acquired analytic function we can apply it to all sorts of objects regarded as factors in a totality.

The various causes of a war or of a famine can be thus disentangled and their respective importance appraised. But only men of relatively high intelligence can analyze thus; it is quite beyond the savage intellect.

§ 9. Finally, there is the function which I have called 'universal conception': by it I mean the faculty of forming concepts which are not concepts of individuals or of corporations, or of aspects of individuals or corporations; but concepts which are applicable to the universe or totality of subjective and objective experience. Such concepts in their furthest development take us more remote from passion than even the detached, scientific use of abstraction, classification, generalization and analysis. But it is not hard to show that they are prompted by passion in their origin.

Consider first the concept of Space. Psychologists explain our concept of space, and rightly explain it, as derived from sense-experiences of our own body. The only doubt in my own mind is whether psychologists have taken due account of all the kinds of sense-experience involved. Hitherto they have derived everything from cutaneous and kinaesthetic sense-experience. I am inclined to think that we need also to consider those internal experiences which give us directly third-dimensional experience, the sense of volume in the trunk and limbs of the body. If these last

were brought into account I think we should be able to show satisfactorily that all the materials of our concept of space are of bodily origin. In viewing the objective world as spatial we project externally a form of arrangement which we first cognize within our own bodies. As each man's body is always intensely interesting to him, the beginning of spatial experience is evidently connected with passion.

The fully developed concept of space is an elaboration and extension of the primitive spatial scheme. The scheme has been elaborated and extended because experience showed that it was profitable to do so; all sensuous experience, in fact, can be arranged spatially. As the natural uneducated man attends much more to sensuous than to non-sensuous experience, the spatial scheme has acquired excessive importance: it has been a good servant; but now tends to usurp the position of a bad master. Much of the advance of thought consists in seeing that noetic experience is not spatial at all, and cannot be represented spatially without falsifying it.

The refined and abstract parts of space-experience have very little direct passion in them; circles and triangles are cold, impartial things. There is more warmth in applied mathematics, but not too much even there. We may compare the case of music. In its origin and early develop-

ment music is an intensely emotional affair. But some professors of music are as dry as mathematicians; harmony and counterpoint can assume forms which are apparently strange to all human emotion.

Throughout its development spatial experience is evidently noetic; we understand a spatial object by a single act, not by addition of parts. Extension of our spatial knowledge of the object is obtained by developing a system which was struck out at a blow, the space-map which we start in early childhood with our own body and its immediate surroundings. The fully developed space-conception is a noetic scheme of vast extent, commensurate with the whole material universe so far as we can imagine it. Any spatial datum we think of as occupying a position within this scheme; and in thinking of the position we form an implicit synthesis of space as a whole.

§ 10. Similarly our concept of Time begins in passion and ends remote from it. An examination of the concept will both prove this and also show how total-working is our way of dealing with time.

The material out of which we form our time-concepts is mainly the progressive sense of effort which we experience when attention is subjected to continuous strain. Imagine a man attending to an object for three minutes; the effort of attention causes a continuous change of feeling from the



beginning of the period onwards. This is the chief material of time: the rest is made up of our experiences of memory and anticipation; our past fades off in a long diminishing perspective behind us, while the future is seen as a less prolonged perspective in front. Our way of dealing with time-materials is total-working: we do not make our time-concepts by adding part to part; we grasp periods of time as wholes, and the motives which prompt us to it are passionate.

The periods of time which we naturally grasp are those which are occupied by interesting experiences, the time we need for a night's rest, or for preparing a meal; or they are periods which intervene between two interesting experiences, as between two meal-times. The most commonly recognized time-period is that interval between two sleeping-times which we call a day. To the natural man a day is not an abstract period, but a round of activities which form a totality.

We must make a distinction between practical and theoretical time-concepts. The practical deal with periods in which we do something; the time to play a round of golf, the time in which we can walk to the town, the time of sowing, the time of harvesting: theoretical time-concepts are useful only for science—a thousandth of a second, a century; we have however no real grasp of them. The nineteenth century we can only represent to

ourselves in an abbreviated moving-picture form, with the Napoleonic Wars at the beginning and the Boer War at the end, and some drama of a Reform Bill in between. Still less can we grasp longer periods such as the Middle Ages, which we can hardly represent as a continuous scene.

Time as a whole is a very attenuated conception, very weakly apprehended by the mind, and in regard to our warmer interests nothing more than a sort of diaphanous frame-work enclosing them. It is analogous to space in that it is a great system in which events are arranged; it is greater even than space because many more things can be arranged in it; though it is not profitable to arrange everything. It is no objection to the noetic or total-working character of time that it is not a complete totality, and that we can imagine no beginning nor end of time. We can imagine no beginning nor end of space. Both are noetic conceptions which shade off impalpably beyond our grasp.

§ 11. Finally, there is Relation. I speak of relation as one concept, though to do so is carrying classification rather far; there are really innumerable sorts of relation which have no more than the most attenuated common quality. Let us consider how relations fall in with our accepted principles. I am speaking of relations not as existing objectively (if they do exist so); but as functions of the individual mind.

William James did good service in calling attention to the relational, or 'transitive' elements of thought, as he called them; the elements which are represented in language by conjunctions and prepositions. Nouns and verbs he compared to the resting-places or perching-places of thought; while the little words represent its flight from point to point. And he laid stress upon our positive experience of these flights. "We ought to say a feeling of *and*, a feeling of *if*, a feeling of *but*, and a feeling of *by*, quite as readily as we say a feeling of *blue* or a feeling of *cold*." All this was very true and timely. It wants supplementing by the fact that the movement of thought represented by the little words is movement within an enveloping totality. Where there is no consciousness of oneness there is no consciousness of transition. When we are startled in the midst of a game and break off suddenly to attend to some clamorous appeal, we do not feel the passage; we have no sense of 'and' or 'but.' So with restless children who pass abruptly from one occupation to another with no intervening link.

I think that thus we can explain everything which can legitimately be called a relation, and also avoid some common mistakes. It is sometimes said, for example, that space is a relation. I should prefer to say that there are spatial relations; but that space itself is not a relation: it is rather a

scheme or enveloping concept within which relations exist.

It needs no argument to show that there is passion in all common relations, all relations of 'and,' 'but' and 'by.' But are all relations passionate? It has been pointed out by many thinkers that relation is all-pervading, and that every element in the universe is in some degree related to every other: in a certain sense the Dalai Lama is related to the canals of the planet Mars; though he will never see them nor take the smallest interest in them. Such relations are very attenuated and very remotely passionate. We cannot say more than that they are possible components of someone's world. Each man's world has unity as an intellectual system, and also a unity of passion which is the expression of his general interest in life.

## CHAPTER XI

### REASONING

§ 1. The remaining chapters of the book will be spent in showing how the principles previously explained are exemplified in various kinds of intellectual character, the good reasoner, the scientist and the man who makes advance in things of understanding.

It is an evident fact that among the men we know there are great differences in reasoning power. Some are good reasoners on every subject which they take up; others good on some subjects but bad on others; others bad all round. We have various names for the good reasoner; he is styled a man of good judgment or judicious man, or a shrewd man, the latter especially in relation to practical affairs. The elements or conditions of good reasoning I hope to analyze presently; its most obvious characteristic is that it brings the agent where he wants to go. The bad reasoner and man of bad judgment, on the other hand, consistently fails; he sets out for one thing and

REASONING

gets something quite different, or very often nothing at all. The minds which succeed and which fail have respectively certain qualities of intellect and passion which accord with the principles already set forth.

The reasoning which I have now in view is mainly that of the practical kind; the theoretical is an extension of the practical. I use the term 'reasoning' rather than 'judgment' in order to include inference, which might seem to be excluded if 'judgment' were used. For the purposes of the discussion let us keep the current distinction of judgment from inference, though, as will be shown later, the distinction is commonly made too absolute. What I wish to ascertain is the conditions of good judgment as opposed to bad. But this involves stating what judgment is simply.

We cannot comprehend the nature of Judgment unless we recognize that no act of judgment is isolated, but belongs to a wider context expressed or understood. It must lie within what is technically termed the 'field of discourse.' No one in his senses makes the isolated judgment 'Socrates is a man,' apart from something which preceded it and from something which is expected to follow. The term 'field of discourse' is of course specially appropriate to cases where discussion is in progress; but, as I propose to use it, it will apply also to cases where there is no discussion, but only a solitary thinker. Now the field of discourse is delimited

by the background of interest in the agent's mind, in other words by a supporting noetic-passional system which stands behind the individual judgment. Such a supporting system is discernible even in judgments which appear abrupt. In a thunderstorm we exclaim 'What a bright flash!' This seems to stand alone: but there is really much behind it; a general understanding of storms, a knowledge of what a bright flash means, and so on. That is the intellectual side of the supporting system. And essentially combined with it there is a passional system, a persistent interest in storms, a fear of their danger, a love of their beauty, an interest in them as natural manifestations of a force which science can now control. Though these intellectual and passional elements may lie more or less submerged and subconscious, they are still truly active, and quite indispensable to the comprehension of the judgment.

It is difficult, and I am not sure that it is altogether profitable, to find images for the relation between the judgment and its supporting system; because all comparison of mental to material things gives occasion to misunderstanding. The judgment is like a focus-point of strong light in a weakly illuminated field, or like a flash from a cloud charged with electricity, or like a cry voicing the feeling of a multitude. There is in the mind of the judger a field of understanding and passion; the

point where the judgment appears is that to which his attention is for the moment specially directed.

This account of judgment is evidently different from some others in vogue, such as that judgment consists essentially in the junction of two ideas, or in the reference of an ideal content to Reality, or in an act of belief. Fully to refute these definitions would take me far into the detailed investigations of logic to which the present work merely forms an introduction. But I may say briefly that they fall utterly out of credibility so soon as we realize the intimate connection of the understanding with the dynamic side of our nature. If judgment is primarily associated with action, it is impossible that it should consist in joining two ideas—whatever ideas may be. The whole basis of such a theory is the degenerate scholastic identification of judgment with the verbal expression of judgment, the sentence; together with that Chinese ingenuity which reduces every sentence into the form of subject, predicate and copula. Mr Herbert Bradley's doctrine also that judgment is the reference of an ideal content to Reality (with a capital R) seems no less wide of the mark. Busy men make judgments every moment which for the most part refer to things needing to be done, and are in no way concerned with the reference of ideal contents to Reality. The theory which perhaps has most currency just now is that judgment is



an act of predication expressing belief. But this again will not do: some judgments—fictions for example—have nothing whatever to do with belief; and the commonest and most important sort of judgments, I mean expressions of purpose, have no direct reference to belief.

Most of the difficulties of defining judgment disappear as soon as we choose the right kind of judgment to stand as typical. The kind which is truly typical, because commonest, most useful, and that which exhibits most plainly the power of the mind, is the prospective judgment, 'I will do so and so.' The explanations of judgment which I have just rejected are evidently inappropriate to this type; they have in view what I would call the judgment of recognition, 'This is so and so.' We use this recognitive judgment continually; but mainly in subordination to the prospective.

I am now prepared to offer my own definition of judgment, which is dynamic, that is, lays stress upon the active character of mind, and its essential connection with passion. Judgment is an act of noetic synthesis in combination with a passional interest, supported and rendered intelligible by connection with a wider synthesis and interest; it is the point within the wider synthesis and interest which at the moment is intensified by the agent's attention.

§ 2. Let us now consider what Inference is,

and how it is related to judgment. The possibility of making an inference depends on the fact that the data of the inference exhibit pattern. Let us see what this means in various sorts of inferences. We pick up a fragment of some familiar object, a printed leaf of paper, for example, and, recognizing it, say 'This is part of a Greek dictionary.' We see a boy with other boys doing certain movements on a football ground and we say 'He is going to practise place-kicking.' We see a scrape upon a golf-green and we say 'A rabbit has been scratching here.' These are typical inferences, though I contend that they are not the commonest kinds. The commonest kind of inference is when we resolve to do something (this answers to the datum) and then understand that something else must be done in consequence of that resolution. It is in the light of these examples that we should view the traditional syllogism. The figures of the syllogism are very simple, indeed conventional, patterns. The data or premisses are part of the pattern, and by 'drawing the conclusion' we complete the pattern according to certain rules.

We can make no hard-and-fast line between judgment and inference. This is plain as soon as we give up identifying judgment with its verbal expression and think of the mental act behind the words. The words of a judgment are spoken suddenly; they break upon the silence and form

a new beginning. But the mental act may not form a new beginning; the principle of continuity in our mental life forbids it. Usually we can see plainly how the judgment continues and develops a line of thought which the agent has long had in mind. Take for example any selection from the several thousand sentences comprised in this book. Judged by linguistic form most of them would be classified as judgments. But, if considered according to meaning, would they be judgments or inferences? Many of them are plainly inferences; some of the more isolated might be allowed to pass as judgments; most would not belong decisively to either class.

I hold then that it is very hard to say where judgment begins; it is equally hard to say exactly where it ends. Consider some ordinary expression of purpose: 'I must get some money from the Bank to-day.' There are some things which are so closely conjoined with this intention as practically to form part of it; such as, that I must write out a cheque for the amount to be withdrawn, and must think of some way of going myself or sending to the Bank. Then there are other things which are certainly not part of the original intention but may be connected with it, as that I should get my bicycle mended to ride down to the Bank, or take the opportunity of proposing a match of golf to the manager. And there are certain other things about

which we cannot say definitely whether they are part of the original intention. Sometimes when the mind is vigorous and its range of vision wide we should say they are; at other times they are not, as is proved by the fact that we often forget them. Nor is the process of inference a process from one definite point to another by a series of clearly distinguishable steps. The notion that it can be is once more a delusion of formal logic; in its actual work the mind never proceeds in this way. I likened the judgment to a focus of bright light within a faintly illuminated field; if that simile be accepted, then inference might be likened to the extension of the light along a certain path, always with a zone of lesser brightness round the main illumination.

§ 3. Let me now proceed to explain the qualities of the man who reasons well in practical affairs, and to show how common opinion harmonizes with the principles just laid down, and does not harmonize with rival theories.

Take the latter first. How does the advocate of the junction-of-ideas theory of judgment explain good judgment? I have no authoritative statement to go upon; for I cannot recollect any account of good judgment from the logicians who take this view. But I must assume that they hold good judgment to consist in some specially neat way of joining ideas, or in choosing ideas which are speci-

ally suitable to being joined; though it is not very apparent wherein the suitability would lie. If judgment is to be defined as referring ideas to Reality, then the man of good judgment is one who is specially successful in referring ideas to Reality, taking great numbers of ideas for reference, while carefully rejecting ideas which Reality would repel. If judgment is essentially an act of belief, then the man of good judgment is one who believes many things which mostly turn out true. Now none of these interpretations agrees with what the plain man means by good judgment. Consider a concrete example. Sherlock Holmes, the famous detective, was a great reasoner; his judgment was wonderful and his power of inference far exceeded that of common men. But did this eminence consist in the neat joining together of suitable ideas, or in the reference of ideas to Reality? If he had done no more than that he could hardly have satisfied his clients in the way Sir Arthur Conan Doyle describes. Or take the third alternative—was he remarkable for his great powers of belief? Well, this explanation has more to say for itself than the other two. So far as Sherlock Holmes merely reconstituted the past and tried to form a correct picture of the crimes which he investigated, one might fairly say that he believed much in many theories which were remarkably near the truth. But this would not serve to

describe other equally important parts of his work, for example, his plans for the capture of criminals. Belief is altogether an unsuitable term to describe the prospective work of judgment and inference as they are applied in conducting practical affairs.

I venture to claim that my own theory agrees better with common sense. Let us take the qualities of good reasoning one by one and see if the claim is not well founded. An evident quality of good reasoning is consecutiveness. By this I mean that the good reasoner must be one who pursues a certain line of thought, reflective or active, for a considerable time and is not always jumping about from one topic to another. Want of consecutiveness is a fatal fault in a mind. So also it is in a book. What more fatiguing than continuous perusal of a book like Emerson's *Essays*, which is a series of detached "pebbles of thought"? This quality of consecutiveness is very easy to interpret on the principles I have explained above. A man can think and act consecutively, if, behind the particular act of judgment, there is a large firmly-established system, partly noetic partly passionate, supporting the act of judgment and giving occasion to other acts in harmony with it.

The same condition explains the next quality of the judicious man, his consistency. The consistent man does not pull down with one hand what he builds with the other; his decisions of to-day

reinforce, amplify and explain those of yesterday. And this also is due to the underlying system.

Width of view is another quality; and this also falls easily into place. No man of narrow, fanatical or short-sighted opinions can be credited with good judgment, and no man will act thus in whose mind the underlying system is extensive. If, for example, he is a politician he will be preserved from the petty rancours and short-sighted ambitions of the lower-class party man.

Perhaps the most generally recognized quality of the judicious man is the even distribution of his interest; and this also is easy of interpretation. The quality appears most notably in men standing in command of large practical affairs, whose position requires that they should frequently form far-reaching decisions, such as men engaged in extensive business management or in high political office. In dealing with these men one has an impression of mental elevation; they are like persons standing upon a lofty look-out who keep in view a great scene which the ordinary man can only see piecemeal. The matter with which they deal is vast and full of detail; but they command it as a painter commands some huge canvas crowded with small figures. If, for example, we consult some judicious politician we find that his emotional interest is fairly distributed over the various details, and that he appreciates their relative importance in relation

to that total result which he regards as the welfare of the country. He could not give good advice if, for example, his sympathies were strongly engaged in franchise-reform (because it made some special appeal to him), but were indifferent to reform in our system of land-tenure.

Quickness of judgment is not a constant quality of judicious men; for it sometimes happens that men, who can give good advice if time is allowed, can do nothing quickly: but if a man has this gift it adds very greatly to his intellectual efficiency. Some of the conditions of the gift of quickness are worth examining, as they illustrate the relation between passion and understanding. One common cause of slowness of judgment is defect of sympathy. A man often fails to understand other people because his interests are different from theirs, and he cannot or will not put himself at their point of view. The quick-wittedness of women in dealing with a personal situation is mainly due to their power of ready sympathy. Another very common cause of slowness is that the interest which should prompt a man to comprehend and judge has sunk, so to speak, some way below the surface. Let the matter in question be politics. Then, if a man's political interest be overlaid by other interests, horse-racing, for example, or company-promoting, he will not have political questions at his fingers' ends and cannot give rapid and accurate judgments.



Finally, and this is the most obvious quality of all, the man of good judgment must be clear. Now this must be due to the clarity of the supporting system. A man cannot guide his conduct in the definite fully-assured manner which marks practical competence unless the lines of the supporting system are fully and firmly drawn. Contrast the diffident, hesitating manner of a man who is new to a business with the same man's manner when he has mastered it. This is what we learn from experience.

At the present time of day it is not worth while to argue at length that the supporting system must be not only intellectual but passionate. Sherlock Holmes was so successful because he had his heart in his work. The doctrine that passion is the enemy of reason is one of those dreary legacies which have come down to us from an age when education was controlled by pedants whose interests were remote from the main springs of human nature. The simple fact is that the supporting passionate system also must have its qualities of clarity, width and consistency; the passion that makes us reason badly is irrelevant passion. Passion has its own logic no less than understanding.

§ 4. A few words only are needed to show that theoretical reasoning is to be explained on the same principles. It is usual to distinguish two kinds, synthesis and analysis; in the former of

which we put together and in the latter take to pieces. Though the two processes are never separate, and greatly help each other, I hold that they are rightly distinguished, and require different mental attitudes and gifts of intellect. Synthesis is evidently prior. Consider a concrete case—a historian who wishes to relate and explain philosophically the events of a period. His first work is to represent to himself the events, so that they go on as a drama within him. This done, he can analyze the period and assign to each event and personality its due share in the result. Or take the case of political economy. Before a man can analyze out the various economic factors he must rehearse within his interior playhouse the living processes of trade.

Now it goes without proof that the excellence of the synthetic process in any particular detail depends upon the excellence of the supporting intellectual and passional system. This is what makes it so easy to sample a book and thus save superfluous labour in reviewing; any page of a history will show the experienced reviewer whether the author understands his business, is truly interested in his subject and has grasped its system.

Analysis also depends upon the system underlying the synthesis. If the system is well drawn, clear and copious, and is firmly grasped, then it is easily taken to pieces. Analysis indeed is a good

test of synthesis; if a man wants to know if his synthesis is good, let him take it to pieces. If it does not come to pieces easily, there is probably something wrong with the construction.

And analysis itself is a sort of construction. When the analyst takes to pieces, he does not let the pieces lie about separately; he recombines them. Suppose that the historian of a period, say the age of Victoria, wishes to analyze the part played in it by some potent personality, say W. E. Gladstone. That act of analysis involves a new construction, with its own interest and supporting system. Or take such a piece of practical analysis as self-examination when, after a spell of action, the agent sits down to review his conduct and sift out the motives which impelled him. Such self-examination may seem to be passionless; and it certainly requires detachment from the urgent passion of action. And yet it is by no means without passion. A man does not analyze himself for nothing—just to exercise analytic power. He must have some motive; to justify his conduct to a critic, to quiet his own conscience, or to present himself in an autobiography. Whatever his purpose may be, he will make his analysis in accordance with it. Suppose for example that he is examining himself to see if love of money accounted for his actions at a certain time; what he will do is to represent himself as acting solely from that motive

and to see if that accords with his actual conduct. And this of course is a reconstruction.

This case of self-analysis is a practical example; but exactly the same principles explain the theoretical cases, such as the analysis of the political economist. He thinks of men as animated by the various separate motives of trade and sees how far that will explain actual behaviour.

§ 5. We cannot understand right reasoning unless we understand wrong reasoning; the final section of this chapter will be devoted to the general causes of fallacy. A man is inclined to fallacy on any special subject when he lies open to some cause impairing on that subject his interest and noetic power. He is inclined to fallacy generally when a wider cause of impairment extends over his whole character. The logician ought to look to character for the ultimate source of fallacy. According to the current classification the kinds of fallacy are the "verbal, inferential, demonstrational, and methodological"; to which correspond the sources of fallacy, "ambiguity, invalidity, inconclusiveness and breach of method" (Boyce Gibson, *Problem of Logic*, p. 281). But what determines the working of these "sources"? Why is our friend Jones so invariably fallacious on some particular topic? Though otherwise a man of good understanding, when he talks about that, all the fallacies, verbal, inferential, demonstrational and methodological

appear with fatal impartiality; and all the sources, ambiguity, invalidity, inconclusiveness and breach of method, are equally active in his mind. And again, why is Mrs Jones a lady who cannot reason on any topic whatever?

As an introduction to the detailed treatment of fallacy I would offer a few remarks upon the main causes tending to the general impairment of character, and will show how they impair our power of reasoning. The most obvious is moral deficiency. Without going thoroughly into the nature of moral evil, it is enough to say that it always shows practical inconsistency. No one is perfectly bad; every criminal recognizes most of the current moral values, while repudiating others. And, since human values form a consistent system, the welfare of human life as a whole, the transgressor is practically inconsistent, pulling down with one hand what he builds up with the other.

To survey the moral field and show how the various forms of vice involve wrong reasoning would tend too much to edification, in a work which is not intended to edify. Let me therefore adduce something remote and classical, for instance, the tyrant, who in Greek ethics is the stock example of the bad man. Even a tyrant cannot afford to be altogether mischievous to the common weal. He must at least want his state to be strong and successful; otherwise neighbouring tyrants will

do him down. And yet every efficient warrior or statesman who contributes to his success must be regarded by him with suspicion as a possible supplanter. Surely on this ground alone, if not for others, a tyrant cannot be a good reasoner; the habit of facing both ways in conduct cannot be thrown off when he turns to thinking.

A very common cause impairing character is the specialization of function which is rendered inevitable by our civilized division of labour. We are, each of us, tied down to some definite task or other, and can only correct the narrowness of our practical opportunities by wide reading and converse with persons of the most various social grades. Even the leaders, who have the widest outlook, are limited by the fact that the lower grades are so remote from them. It is a limitation to the Cabinet Minister that he does not know intimately the life of the cobbler.

The most narrowing of all the kinds of work which men do are those which are concerned with 'training and restraining.' The function of a mill-stream is to flow swiftly forward and turn the mill-wheel; but it cannot do this unless it be diverted from its direct course and banked along its sides. So in our complicated civilized society the best work cannot be done unless a number of healthy natural tendencies are partially or temporarily repressed and trained by a more or less irksome

process. This regulative process is just as essential to education as positive learning; but it evidently involves a certain mental danger to those engaged in it. When a man is tied to negative work his soul tends to be saturated with negation and to lose sight of the ultimate positive meaning. Let me illustrate by the educator's attitude to originality. Among its other functions an academy should stimulate original literature; the most academic of educators would not defend openly an institution that fostered an Alexandrian type of mind and buried originality under imitation and commentating. But in practice academies are all against originality, and nearly always succeed in killing it. The business of the educator is to restrain the young man from producing till he is mature, and to train him meanwhile in the study of classic masterpieces. Somewhere in the National Gallery in Trafalgar Square a legend stands (or used to stand) inscribed on a frieze bidding the visitor admire the works of the great masters of the past who will never be rivalled by anything which the painters of the future can do. This is a most academic inscription. It is this spirit which makes the teachers of the Faculty of Arts so intensely conservative. It is quite exceptional to find teachers who understand clearly that the study of the past is nothing but a preparation for the future. The majority, though they necessarily

work for the future, are always dreading and distrusting it. Surely this does not make for rationality.

Another cause of failure in reasoning is weakness; not the weakness which leads to blank ignorance, but the weakness which forbids us to attain though we know of the attainment and desire it. The classical example is the fox who could not reach the grapes and therefore persuaded himself that they were sour. This 'vulpine fallacy,' as we may call it, is most insidious, almost inevitable. Self-respect forbids that we should sit down tamely and say, 'I want this most desirable object, though I know I can't have it.' What generally happens is a sort of cleavage in the agent's consciousness. In his full consciousness he declares, and indeed believes, that the grapes are sour; subconsciously he continues to desire them. And this, of course, is a source of bad reasoning.

Failure of reasoning, then, depends ultimately on imperfection of character; and every character is imperfect which falls short of the all-round harmonious development of which human nature is capable. And so we shall have fallacy always with us; for, though human nature may be perfectible, it is certain that we shall always have moral evil, narrowness and weakness with us till the world has changed out of all knowing. I say all this, not in the interests of pessimism, but to



reassure those who do not like too much right reasoning, and argue, not without some plausibility, that irrationality has considerable value, and that the extirpation of all fallacy is in no wise desirable. 'How tame' they say 'would be the world without any irrational people: how dull if everybody saw with perfect clearness what he ought to want and always strove consistently and with all his force to get it. What would become of art and mystery, intrigue and social complication?' Listening to these charming irrationalists one might suppose that the consummation which they dread is close upon us. This cannot be; for whether they know it or not, at least half the human race is more or less upon their side.

Biology teaches us that the most important work of each generation is to provide for posterity; since responsibility for the whole boundless future rests with the present. This paramount duty shapes the destiny of all living creatures, man no less than the others. Above all it shapes the destiny of woman. Now naturally and inevitably the attitude of woman in this respect is not so fully rational as that of man. It is necessary for the continuance of the race that she should yield, but necessary for the quality of the race that she should in some measure resist. Thus her most characteristic attitude is that of offering resistance which must be overcome, and which subconsciously she

desires should be overcome. A woman whose intellect entirely escapes the influence of her biological function runs the risk of being thought unfeminine; many men have difficulty in pardoning a strong understanding in a woman unless she has quite passed the age of attraction.

In women we have, I think, the clearest example of the dependence of intellect upon general character. Women have, and always have had, a certain tendency to irrationality. I do not mean that the tendency is inevitable; for it can be corrected by education. The existence of the tendency makes it all the more needful that the education of women should be thorough and be guided by a philosophical study of the capacities and needs of feminine character.

## CHAPTER XII

### SCIENCE

§ 1. What is science and what are its conditions, intellectual and passional? Such are the questions dealt with in the present chapter.

The great fallacy to avoid is that science consists in accumulating information. Scientists are of course very well-informed about the subjects they study. They are also men of much shrewdness and mother-wit. But neither information nor shrewdness is what distinguishes them from the non-scientific. Many rustic people and many savages are both well-informed and shrewd upon their own ground. I believe that a definite distinction can be made between the scientific and the pre-scientific stages of understanding; and that to appreciate it is important for educators and for those who wish to understand the history of culture.

Before attempting to draw the distinction let us first be clear what we mean by science. Any particular science may be defined as a very wide noetic synthesis correspondent to an equally wide

system of reality. Take for example geology or chemistry. In either case we have a scheme of principles—in geology the familiar system of physical agencies used to explain the changes of the earth's crust—which correspond to the principles actually operating in nature. Now the possibility of framing such a science evidently depends on believing in the systematic character of nature. The geologist must base himself on the faith that the forces which mould the earth's crust have worked regularly in the past and will continue so to work in the future. If his scheme of principles does not accord with natural facts, he knows that it must be faulty and thinks of amending it; he does not attribute any caprice or want of system to Nature.

This then is the new element which marks the origin of the scientific stage of understanding, a belief in the systematic character of nature. When therefore we inquire how science first arose, we must put the question into this form, 'How did men come to believe that nature works systematically?' To this there is one obvious answer, which I hold to be wrong—that men discovered system first in one part of nature and then in another, and putting things together concluded that all nature is systematic. I hold that the truth is very different: men did not attain science in general by adding part to part, but by framing a synthesis

of cosmic amplitude accompanied with a corresponding width of valuation.

The consideration which seems to me decisive in this matter is simply this, that men have no motive to enter upon the piecemeal investigation of nature in the steady and persevering way which science demands; there is certainly no sufficient profit in it, and no sufficient glory. A synthesis of world-wide scope makes quite a different appeal. The founding of science we rightly attribute to the Greeks because with them a world-scheme first appears. How vast a step it was to say "All things are water," and to set men searching to prove or disprove that great generalization. With all our advances in method and detailed knowledge we are still building on that foundation laid once for all. In making his generalization Thales showed a prudent boldness; science could never have got started by anything less drastic. Suppose that he had limited himself to what seemed more within his knowledge and said "All liquid things are forms of one primal liquid," and "All solids are forms of one primal solid"—would that have sufficed to set men's minds afire with the desire to know? Assuredly not. Possibly someone earlier than Thales did put forward some half-hearted thesis like these. But if so he was justly disregarded and forgotten<sup>1</sup>.

<sup>1</sup> Cf. Prof. J. Burnet's *Greek Philosophy*, Part I, p. 11, for an argument to show the dependence of the special sciences upon philosophy.

The fact is that science is impossible unless the world is regarded as rational; if the world is irrational it is useless to reason about it. Now to be rational means to have a plan or system. And, when we are convinced that any object is rational, we usually are convinced that we understand its plan. There is of course such a thing as scientific agnosticism; the conviction that there is plan, but a plan which has not been discovered and is perhaps undiscoverable. But this is an artificial and far-advanced, one might almost say a sophisticated, mental attitude; born of much experience, much knowledge of the transitoriness of systems and the great complexity of the world. The natural man, if he cannot understand a thing, thinks it unintelligible. Certainly science could never begin with agnosticism; rather with the triumphant conviction that he, the thinker, had seized the secret of the scheme of Nature. Superficially it might seem that science has receded from its old heroic thoroughness. While scientists do not cease to search for the underlying basis of all material things, they have come to recognize the profound difference between mind and matter, and make no serious effort to reduce them to common terms. But the task, which scientists with their special interests decline, is taken up by philosophy. Philosophy has often been foiled in its synthesis; many syntheses have been made only to be discarded and

scrapped as our knowledge grows deeper and more exact. But the belief that a synthesis is possible is the inspiration of philosophy.

§ 2. With this cosmic synthesis there must be combined a cosmic interest. If the cosmos is regarded as forming an intelligible totality, it must make some emotional appeal: it must appeal as magnificent or terrible or pathetic or lovable; usually it is regarded as showing analogies and affinities with human life and society; invariably it is regarded as bearing upon the problem of human good. These points can hardly be illustrated from the earliest Greek thinkers for want of extant material. We have nothing left of Thales and his immediate successors to give an adequate notion of their systems. The first thinker that has been preserved to us with any fulness is Heraclitus, and his view of the cosmos is manifestly tinged with emotion. He sees in the world that flux, that harmony of warring opposites, that movement of high things downwards and of low things upwards again, which we observe in society; he sees throughout all material changes the governance of reason and the eternal limits which even the sun must not overstep; he sees as the animating principle of things the intense life, the spiritual fire, which we know in the human soul at its best. His book was divided into three parts dealing respectively with the physical universe, with politics, and with

theology; evidently he thought that the principles which prevail in human affairs should be regarded as explaining the physical universe and the gods who rule it; and that cosmic knowledge was important for human welfare.

The upshot of the foregoing remarks is that science in its origin had an intimate connection with philosophy, and consideration shows that the connection is deeply passionate. It is impossible that men should take an interest in the world as a whole unless they have a conception of general human good; in other words, unless they have at least the beginnings of a moral philosophy. From the epoch of Heraclitus no system of moral philosophy has come down to us. Indeed no definite system of moral philosophy arose in Greece till about a century later. But such speculations as those of Heraclitus just quoted contain an implicit moral philosophy; and the gnomic fragments of the Wise Men show how widely the interest in moral subjects was diffused through Greece. After all, man is his own next kinsman; he must have framed an ideal of human life before or simultaneously with framing a total scheme of the world. It is this synoptic spirit which makes early Greek thought so different from anything which we find in the records of anthropology. The barbarian, it is true, is not without his speculations; he has his myths and legends to account for the creation



of the world or the origin of rain. But there is no coherence between the various items; they show no apprehension of a world-plan, or of a conception of human good: in other words, the barbarian is not a scientist because he is not a philosopher.

Now all this intelligence requires a certain development of social organization: society must be so far organized that it forms a system enjoying a total welfare in which the individual shares; and the individual must apprehend both the system and his own share in it. Without these conditions there can be no conception of human good, and therefore no interest in the cosmos, and no possibility of science. Science is a thing of cities or of well-organized and solidly-established communities; that it arises among hermits or solitary shepherds is a pseudo-romantic fiction.

§ 3. The conclusion which is indicated, then, is that philosophy is the parent of the sciences; both historically and logically it is prior to them. In particular the history of ancient thought shows how first a world-synthesis is formed, under shelter of which the special sciences spring up. All this is exemplified in Aristotle, whose interest in the sciences was plainly subordinate to his interest in knowledge as a whole.

How then are we to explain the attitude of the modern scientist with his very loudly expressed scorn of philosophy, or of 'metaphysics' as he

prefers to call it when he really lets himself go? Well, two lines of explanation may be suggested. There are plenty of people working faithfully and well at tasks they do not comprehend—librarians who catalogue and classify but know nothing of literature, and bank-clerks who write up ledgers and cast accounts but are quite ignorant of finance. So also there are scientific men who spend lives over microscopes and test-tubes working at tasks whose wider issues are quite beyond them. Partly they are inspired by confidence in the leaders of science whose wider vision guides them; partly we must regard them as instruments of the social mind whose knowledge and valuation are greater than those of any individual intelligence.

In part, then, the anti-philosophic scientist is to be regarded as a specialist who does not know his limitations; partly also we must recognize that in some cases the special sciences have really grown so big that each of them may present the fallacious appearance of a world-synthesis to minds of limited culture. Hence some chemists, for example, have thought that the scheme on which modern chemistry is based is capable of cosmic application and champion it with cosmic enthusiasm. Many such a one we have seen come forward, full of the confidence which imperfect knowledge bestows, presently retiring hurt, bewildered and loudly protesting when philosophers point

out to him that his chemical scheme of atoms or energies is ridiculous as an attempt to explain the facts of consciousness.

It is difficult to think of a physical metaphor which is adequate to the relation between philosophy and the sciences. The best I can suggest is the aloe-plant. The spreading leaves of the aloe we all know well; they grow from a thick round central core. The young leaf begins as a pattern upon the surface of the core, then gradually detaches itself and falls outward to run its slow life-course. The central life of the plant is in the core from which the leaves are successively detached. Philosophy is the vital core of knowledge and the sciences are the leaves.

§ 4. The foregoing considerations have a bearing upon some controversies. Perhaps the most eagerly debated question in recent philosophy is whether truth can be equated to utility. I pass by the obvious consideration that, while truth is noetic, utility is passional; the point which I wish to emphasize is that, whereas truth is always a systematic totality, the useful things which any particular man desires do not, for him, form a systematic totality. Observers, studying the habits of the agent, may see system in what he does; but the agent himself need not be conscious of it.

This objection to the utility-doctrine of truth will hold good, only if 'utility' be understood in

the ordinary sense as applying to ordinary objects of appetite or to objects not recognized as having intrinsic value. But utility is sometimes used in a higher sense, as equivalent to the systematic totality of rational human good, recognized as such. In that case I should put forward an objection of a different kind; I should point to the divergence of intellect from passion in its most advanced development. The conception of a cosmos is in its beginning most intimately related to human desire, and, as I have just tried to show, a certain relation to desire persists all through. But the fully developed scientific conception of the cosmos which we call Truth (with a capital letter) is very different from the totality of objects of desire.

The same considerations are relevant to the controversy between monism and pluralism. William James was accustomed to ascribe the preference for monism to a mere matter of taste, a superficial satisfaction in dwelling upon the unity of things. He himself thought it far better to regard the universe as consisting of an indefinite number of disconnected reals. But can we let the preference for monism be waved aside as mere prejudice, or as an expression of 'tender-mindedness'? Does not the chaos of these disconnected reals affront the reason? The usual defence of pluralism is that it protects the interests of personality. Here, of course, I am with it. Personality is the surest

thing in our experience; and, if I had to choose between monism and personality, I should let monism go. But I think that monism of a certain sort satisfies the demands of personality better than pluralism. The higher moral life is based upon the belief in a totality of goodness; the higher intellectual life upon the belief in a noetic totality. And if the cosmic syntheses which men frame have any possibility of attaining truth, the cosmos must be dominated by a single intelligence.

## CHAPTER XIII

### THE ADVANCE OF UNDERSTANDING

§ I. From the foregoing principles there follow some noteworthy considerations respecting the advance of understanding. I use the general term 'understanding' instead of 'knowledge' or 'science' to cover advance in literature and art which the other terms would exclude.

The general cause of human progress is that the lower stages are insufficient to satisfy us. We had an example of natural advance in our survey of the kinds of passion. It is by a sort of immanent dialectic that man rises from the stage of desire to that of affection and from affection to valuation. This is the dialectic of passion, something much stronger and richer than Hegel's bloodless travesty of the forces of human development. Progress, as the optimists of the 19th century taught us, is a general human law. All honour to them for seeing it; it matters not that they underestimated and overlooked the causes which so often frustrate the law, and make progress rather the exception than the rule in actual practice. The important thing

is that the rule is there; when we know that, we shall have heart to deal with the opposing causes.

We can distinguish two kinds of intellectual advance; that which consists in developing old values and that which consists in establishing new values. The former is comparatively a simple and well-recognized process. In literature, for example, the things of thoroughly established value are called classics; it is easy to make advance by working upon classics, in editing them, explaining them, and generally enhancing their value to the world. So with the work of elaborating the details of any well-established study, such as chemistry. The other sort of advance consists in producing new classics—which, of course, happens from time to time—and establishing new branches of study. It will hardly be disputed that the latter is the more important and better worth discussing.

In the establishment of values, again, two cases may be distinguished; we may discover quite a new province of interest or we may treat an old province in a new way. Each case illustrates differently the connection of understanding with passion.

When men discover a valuable province, what is done is to bring a new class of objects into relation with recognized principles of value. The class of objects may be one which was hardly

observed to exist, or it may be one which was perfectly familiar but not thought to be valuable. Let us take the latter case, and illustrate by an example outside the strictly intellectual field. We may say that till modern times children were regarded by every one except a certain number of mothers as being necessary evils. It is true that they satisfied an imperious instinct, were useful to carry on valuable institutions, and became in time rational persons with whom friendship was possible. But in themselves they were nuisances; creatures to be put out to nurse, domestic lumber to be stowed away in nurseries, young cubs whose natural offensive tendencies must be eradicated by training. The 'discovery of the child' on which modern culture so justly prides itself is the recognition of value in an object not previously seen to have any.

When the child was discovered then all the art and poetry and lore of childhood became possible; a new field of material was opened out to painters, poets, story-tellers and to scientific men. The qualities that we now find interesting in children, their native grace, their quaint wild ways, the curious problems of their psychology, are not alien to the qualities previously recognized as interesting elsewhere. But they had not been seen in children.

If this were the proper place, my argument could be illustrated further from very various



fields. Let me mention briefly a scientific case, that of anthropology. For many ages the manners and customs of savage races have attracted attention, and descriptions have been written of them. But it is only recently that anthropology has been a science, which means that men had not perceived heretofore that the complicated, apparently meaningless and often disgusting doings of savages could be explained on recognized principles of human behaviour and threw most valuable light upon problems in the history of culture. It is characteristic of these advances that they not merely light-up a new field, but also throw reflected light upon fields long since explored. Our view of Hellenic origins has been quite transformed by anthropological discoveries among nations whom the old-fashioned scholar would have despised as filthy and utterly uninteresting savages. This example illustrates well the law of progress; our comprehension of the ancient Greeks is greatly wanting so long as we leave out of view the stage of barbarous culture from which they sprang: just as we cannot understand grown men till we understand children.

The lesson which I wish to draw from the foregoing examples is tolerably obvious, so obvious that I need not delay long over it: it is that advance of understanding requires enlargement of the scope of passion. The times which are specially favour-

able to originality are those in which the leaders of opinion are willing to recognize new forms of valuation. "What I don't know isn't knowledge"—to take that attitude is to proclaim oneself an enemy of understanding. A narrow conservatism, a disbelief in the possibility of anything good outside one's own personal experience, a strict limitation in the range of sympathy—all such mental habits contribute to form an atmosphere very chilling to the intellectual pioneer.

§ 2. Now take the case of a creative advance in an old field: here a somewhat different fact calls for our notice; the advance is made *per saltum*. An established value may be gradually developed; in the interpretation of a classical author, for example, edition succeeds edition bringing changes which in the aggregate become considerable, but are not often revolutionary. But the establishment of a new value must be done at a blow. From time to time we see the establishment of new styles in art or in poetry, or a great revolution effected in a science. Now this must be done by the construction of a new synthesis. Intellectual revolutions, like those of politics, may be prepared for by steps, but they are not done by steps. Some gifted person, whom we term a genius, forms a great scheme, matures it, and gives it to the world. Then, and not till then, does the world see that a new system of values has been established. The sudden-

ness is most noticeable in the domain of art; because there the matters involved admit least of verbal discussion and explanation. Music is perhaps the best example. The establishment of a new musical style can be done only by producing a first-rate work in which the style is exemplified. Wagner for example could prove his theories only by producing his works. And thus the appearance of Wagner's music is an abrupt event, standing out clearly from among the productions of his contemporaries.

This mode of advance explains some familiar incidents of intellectual progress; one of the least happy is the travail which accompanies it. It is a precondition of change of style in matters of intellect that men should be discontented with the old. Take painting as an example. Some people begin to feel that the choice of subjects, the manner of treatment, the general attitude of the painter is far short of what might be done. Usually the dissatisfaction is hardly as definite as even this. It may rather take this form. Man, civilized educated man, has a permanent need of art; from time to time he naturally turns to art seeking refreshment and comfort. But the plastic art which exists does not give him what he wants; he goes there expecting help and gets none. Hence he is discouraged, discontented with himself perhaps, thinking he is too stupid to appreciate what

is really good, and that his artistic sympathies are a delusion; perhaps inclining to think that art itself is a delusion and that the only rational course is to put it out of his mind. In either case his path is towards dejection and pessimism.

And because every real advance is something suddenly new there must be opposition from the old. Every society makes its institutions as it goes along, systems of religion, of law and government, of social organization and, not least, of art. All these in the last resort are spiritual facts, systems of understanding and of passion in the minds of men. And they gather over the face of society like a crust which crushes and compresses the forces of progress. In support of these old systems are enlisted the interests of men who have grown grey in their service and whose livelihood depends on the continued recognition of their value. The explanation of the non-progressiveness of certain societies is that in them these barriers of immobility have become too strong to be broken through.

Thus in our modern world almost every creative genius who puts out new forms begins his career in the bitterness of revolt. Behind every advance there is the pressure of desire, and everywhere among us there are established systems with organized agencies choking back the desire or offering to it illusory satisfactions. The only creators not

tinged with bitterness are those who came first in the 'youth of the world' and had no enfettering traditions. Hence the preciousness of what remains to us of Greek art and literature. They were the first; and so their beauty is not deformed with pain.

I do not profess to determine exactly the relative shares of the individual and the social mind in the production of new syntheses. The Hegelians, revolting against individualism, put everything upon society, and talked as though society had hands to write books and lips to utter songs. This is nonsense, and every Englishman will recognize it for such. But the other extreme of individualism is nonsense too; though how far nonsense the present state of knowledge does not enable us to decide. I believe that the mind of the artist must be such as to feel the want and discontent already felt by society, and that the synthesis which he produces has been prepared for both negatively and positively by the social mind.

Now for the practical consequence of this. A new intellectual synthesis being essentially total-working and sudden cannot be predicted. If we could predict it we should know how to provide for it. Governments which desire to foster originality could appoint committees of experts to look out for new syntheses and recommend rewards to their makers. The state, instead of giving doles to

keep the broken-down descendants of genius from the workhouse, would reward genius itself in its first creative youth. Quite absurd—so much so, that no one even proposes it. The committee of experts would not recognize the new good thing when they saw it; expert opinion always works within the circle of the established values. A committee is well able to appraise a new edition of Shelley, and to offer rewards to encourage persons to edit Shelley; it could not appraise a new Shelley. It is the greater public which will appraise the new Shelley and judge whether he is a mere oddity or a genuine expression of the social mind. In the domain of science a committee, it might be thought, deserves more confidence. And yet experience scarcely confirms this.

What the creator wants is not official encouragement but freedom. Everything impairs freedom which checks the ranging of youthful minds. To revivify ancient sciences, as classical archaeology has been revivified by anthropology, it is desirable that minds should be allowed to traverse the most diverse fields and to make various combinations of studies. This is hindered by rigid systems of curricula. Until recent years it was practically impossible for an Oxford student to combine the ancient classics with anthropology without flying in the face of his teachers. At present it is extremely difficult to combine philosophy with natural science;

though there are great prospective advantages for both studies in the combination.

And the creator needs freedom to make his appeal to the wider public. His mind is based upon the social mind; to society he should go for the verification of his claim. Arrangements which facilitate the making of a public appeal are most valuable aids to intellectual progress.





## INDEX

- Adams, J., 156  
Aristotle, slavery, 217; logos, 225;  
scientific interest, 285  
Aveling, F., 47
- Bagehot, W., 173  
Baldwin, J. M., 130  
Benett, W., 118  
Bergson, H., mental retention, 64;  
instinct, 172  
Binet, A., mind is made of images,  
47; hallucination, 83  
Bradley, F. H., 260  
Bridgman, L., 109  
Bruce, King, 141  
Burnet, J., 281
- Casanova, G., 165
- Dante Alighieri, 116  
Darwin, C., 11  
Descartes, R., 125  
Doyle, Sir A. C., 265
- Emerson, R. W., 266
- Gibson, W. R. B., definition of  
logic, 4 seq.; fallacy, 272  
Gotch, F., 114  
Green, T. H., 102
- Haldane, J. S., 126  
Hegel, G. W. F., social mind, 177,  
297; dialectic, 290  
Heraclitus, 283  
Herbart, J. F., 61  
Hobhouse, L. T., 102  
Hodgson, Shadworth H., 13  
Hugo, Victor, 190  
Hume, D., 95
- James, W., recalling the forgotten,  
71 sq.; habit, 86; sensation  
due to peripheral stimulus, 94;  
complexity of the brain, 100;  
primacy of sensation, 102;  
feminine identity, 243; transi-  
tive elements of thought, 255;  
monism, 288  
Joseph, H. W. B., thought, 9;  
association of ideas, 64
- Keller, H., 109
- Le Bon, G., 166  
Locke, J., uneasiness, 59; the  
soul thinks not always, 125  
Lotze, H., 27
- MacDougall, W., epiphenomen-  
alism, 14; animism, 28; mental

- retention, 64, 134; national character, 166; relation between sentiment and emotion, 191; instinct, 210
- Maeterlinck, M., 172
- Marshall, H. Rutgers, 128
- Mercier, C., 16
- Miller, A. W. K., 147
- Mitchell, T. W., 123
- Mozart, W. A., 57
- Murray, G. G. A., 129 sq.
- Newton, I., 151
- Plato, psychology, 10; appetite, 181; logos, 225; concepts, 247
- Rossetti, D. G., 171
- Shand, A. F., 192; instinct, 210
- Spencer, Herbert, 15
- Spinoza, B., 17
- Stevenson, R. L., 138
- Stirling, J. Hutchison, 9
- Stout, G. F., epiphenomenalism, 14; psycho-physical parallelism, 16 sq.; interaction of soul and body, 26; animism, 28; noetic synthesis, 32, 78; cognition of whole antecedently to parts, 51; mental retention, 64; remembering events in their time-order, 68; noetic synthesis, 78; motor co-ordination, 84; perceptual and conceptual levels, 87; imageless thought, 88; verbal images, 96; fusion of taste-sensations, 99; imagery and thought, 110; use of visual imagery, 115; logic, 120; psychical dispositions, 134; complex perception, 240; conception, 242
- Sully, J., 120
- Thales, 281
- Thomson, W., 30
- Titchener, E. B., 107
- Wingfield, H. E., 122
- Wordsworth, W., 186

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